



**BERKMAN  
KLEIN CENTER**

FOR INTERNET & SOCIETY  
AT HARVARD UNIVERSITY

Year in  
Review  
2018-2019



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**Urs Gasser**

Executive Director,  
Berkman Klein Center

## 4 Reflections on the Year

Major events over the course of 2018-2019 academic year underscore the urgency and relevance of the work of interdisciplinary institutions like the Berkman Klein Center. From digital privacy violations and cybersecurity vulnerabilities to concerns over harmful speech, election interference and debates over how fast-moving developments in AI technology can be inclusive and ethical, this year has arguably marked a watershed moment in terms of public awareness of some of the most important and pressing issues our Center has been working on over nearly two decades.

Over the past academic year, the Berkman Klein Center has brought together a diverse and vibrant community of educators, researchers, builders and advocates, united in our commitment to academic values and social justice, to explore frontier issues in the digital technology and society space and work toward creative solutions to some of the most pressing challenges of our time. This annual report provides snapshots of the work done at the Center and shares a glimpse into our vibrant community. A few highlights include the following:

Committed to having **real-world impact**, we have worked to advance the public interest by translating our research and bringing it to policymakers, educators, activists, technologists, and other stakeholders across the globe. Our Youth and Media team, for instance, published open access **youth-oriented learning materials** to address digital

literacy among youth in over 40 languages reaching over 350,000 youth and educators across the world by way of partner institutions. Jonathan Zittrain's work on information fiduciaries, which started with the question of whether Internet companies should maintain doctor-like duties to protect user data, was incorporated into proposed **U.S. Senate legislation**. And our Ethics and Governance of Artificial Intelligence team provided expert guidance to the OECD's AI Governance Expert Group, which developed high-level **AI principles** adopted by 42 countries, to name just a few examples.

In our role as a **convener and interdisciplinary connector**, we opened spaces to identify some of the hardest problems of our time and work towards possible solutions. For instance, the Berkman Klein Center's Cyberlaw Clinic engaged with attorneys general and their deputies from 36 states through the **AGTech Forum** on next generation privacy and security issues. Using novel pedagogical approaches and bridging across communities and spheres, our educational programs also engage with future leaders: the **Assembly** program successfully hosted its third cohort of developers, managers, and tech industry professionals to learn and tackle challenges posed by AI; and our **Techtopia** program, a multidisciplinary research and teaching initiative that brings together Harvard students and faculty around the biggest issues in tech today, had a fruitful inaugural year, with over half of the students



electing to engage in group projects. I encourage you to learn more about these programs and the projects that have emanated from them in the pages to follow.

In addition to research, convenings, and education, we have continued to make investments in **tool and infrastructure building** to enable the best possible empirical research in critical areas such as public discourse and the future of democracy. For instance, investments in the **Media Cloud** tool enabled some of the most in-depth empirical research into analyzing mis- and disinformation issues surrounding the 2016 presidential election. The tool, and the research team's methodology, has since been used to observe how elections are covered in countries around the world. Our Internet Monitor project also released a new publicly available tool called **AccessCheck**, which allows users to track Internet censorship on a global scale and in real-time. Media Cloud and AccessCheck are two of several publicly available tools we have developed; I hope you explore them both in this report as well as online.

In addition to playing a critical role in shaping our research agenda and our working together, our **increasingly diverse community** of students, staff, affiliates, fellows, and faculty tackled a myriad of both challenges and opportunities in the digitally connected world and produced substantial work that ranges from highly practical to deeply empirical. The 2018-2019 community of fellows and affiliates was one of our largest and most

diverse to date, with expertise in data science, algorithmic fairness, data governance, and privacy in the Global South, to name a few examples. Our incoming cohort of fellows and affiliates is equally as impressive and bring a wealth of knowledge and talent to our community.

To embrace new opportunities and address the big challenges in the Internet and society space, we also expanded our leadership team and intensified our commitment to building an even more diverse and inclusive community. We are honored that Martha Minow, the 300th Anniversary Professor at Harvard, **joined our Board of Directors** in December 2018, and in July 2019, Elisabeth Sylvan, our **new managing director**, joined our operational leadership team.

As we look ahead to 2020 and beyond, we will not only continue to explore areas of deep and growing significance, and spark conversations that lead to positive change for those who feel the impact of technology around the globe, but also double down on our commitment to work together in a respectful and inclusive manner toward technologies and practices for the social good that benefit all people, across demographics and geographies.

We are grateful and honored by the contributions of our community, and for all of our supporters and partners that enable us to remain a mission-driven networked organization and to serve the public good.

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The work of Berkman Klein projects and community members was featured in over 450 news reports, journal articles, and blog posts over the course of 2018–2019 academic year.  
Learn more at [cyber.harvard.edu/community](https://cyber.harvard.edu/community)

## 6 From the Headlines

### Smile, Your City Is Watching You

*The New York Times*

June 26, 2019

As local governments eagerly embrace “smart city” technology, Fellow Ben Green argues for privacy protections.

### The Ethics of Artificial Intelligence

*Diversity in Action*

June 21, 2019

“There’s a real need to have people involved in the entire life cycle of AI, from the data collection to developing AI technologies to deploying AI technology to using AI technologies who come from a wide variety of backgrounds and perspectives and geographies and disciplines,” says Assistant Research Director Ryan Budish.

### Want to fix big tech? Change what classes are required for a computer science degree

*Fast Company*

May 28, 2019

Fellow Kathy Pham argues that people in the computer science field will be more prepared to predict the unintended consequences of their work if ethics, humanities, and equity are a core part of their curriculum.

### Don’t let industry write the rules for AI

*Nature*

May 1, 2019

“Companies’ input in shaping the future of AI is essential, but they cannot retain the power they have gained to frame research on how their systems impact society or on how we evaluate the effect morally,” writes Director Yochai Benkler in *Nature*.

### India may be witnessing the next ‘WhatsApp election’ — and the stakes couldn’t be higher

*The Washington Post*

April 25, 2019

“Over the past year, India has seen cascades of rumors spread through WhatsApp with the same techniques used to great effect in Brazil,” writes Fellow Chinmayi Arun. “[T]here is... the potential for more targeting of information on WhatsApp than ever before.”

## The Quantified Worker and Worker Surveillance

*NPR*

April 9, 2019

Faculty Associate Ifeoma Ajunwa's research looks at how job applications screened through AI, workers asked to use wearables like Fitbit for worker wellness programs, and employers who spy on worker smartphones present challenges to worker rights.

## What we learned from analyzing thousands of stories on the Christchurch shooting

*Columbia Journalism Review*

March 26, 2019

Researchers used Media Cloud to examine 6,377 news stories covering the Christchurch tragedy in New Zealand and discovered the role journalism can play in preventing—or provoking—future terror attacks.

## Ocasio-Cortez is right, algorithms are biased—but we can make them fairer

*The Hill*

February 12, 2019

In a study of common approaches to making algorithms less biased, Privacy Tools researchers discover that many of the most widespread approaches do little to address inequality. "We should not trust an algorithm unless it can be reviewed and audited in meaningful ways," write Alexandra Wood and Micah Altman.

## Senators aim to give Internet companies doctor-like duties to protect our data

*Tech Crunch*

December 13, 2018

The US Senate takes up legislation to establish a do-no-harm principle for tech companies that manage vast amounts of consumer data. The Data Care Act is based on the "information fiduciary" principle originally proposed by Faculty Director Jonathan Zittrain, among others.



The Laughing Room.

## First, he wrote a book with Lin-Manuel Miranda. Next, an art exhibit in Cambridge that will tell you if you're funny

*Boston Globe*

November 9, 2018

Jonny Sun, a researcher at metaLAB, debuted "The Laughing Room," an interactive, public exhibit on the role of AI in our lives with Cambridge Public Library, metaLAB, and MIT.

## How Misinfodemics Spread Disease

*The Atlantic*

August 30, 2018

"Memes—whether about cute animals or health-related misinformation—spread like viruses: mutating, shifting, and adapting rapidly until one idea finds an optimal form and spreads quickly," explain Affiliates Nat Gynes and An Xiao Mina. Understanding online misinformation from a public health perspective helps researchers learn how to combat it.

## Warning Kids About Digital Privacy Doesn't Work. Here's What Does.

*Consumer Reports*

August 28, 2018

"Contrary to many myths, kids care very much about privacy," Youth & Media Project director Sandra Cortesi explains. But the task of learning how to protect privacy often is left up to children to navigate on their own. Youth & Media developed a tool to assist with education, touching over 15 different themes related to digital life in over 40 languages.



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## Jonathan Zittrain

Faculty Chair  
Berkman Klein Center

# 8 Letter from the Faculty Chair

The study of Internet and society has become more difficult, if ever it was easy.

A years-long trend from an open Internet and Web to proprietized zones has sidelined some of the most common ways of learning what's happening online, as web crawlers are barred at the entrances to Facebook and Twitter, and formal research on user behavior is entangled in thicket of privacy concerns—even as commercial platforms facilitate ever-more-intrusive surveillance for private marketing and persuasive purposes.

Questions of values are no less straightforward. The American “rights” framework of the 1990s, by which such foundational questions as intermediary liability could be said to be resolved without need for much examination of facts, has given way to a public health framework in which the costs and benefits of various interventions are said to require careful balancing—and across hundreds of jurisdictions and cultures.

Around the corner, I think, lies a new framework that acknowledges that there will, unsurprisingly, not be consensus around either rights or public health, and the private intermediaries expected to enforce standards of behavior will see risk in every course of action or inaction. The emerging framework is one that seeks legitimacy through new process, and it's marked by both an acknowledgment by private platforms that they can deeply surveil and shape behavior, and a de-

sire not to be the parties making decisions about whether and how to do so in the public interest.

This is reflected in, for example, Facebook's move towards an independent review board for its content decisions, by which Facebook says it will be bound. We are entering a new era of “constitutional engineering,” with both public regulators and private companies seeking new institutional arrangements to come to closure—however temporary—on near-intractable governance issues.

Across a wide array of topics and at each layer of the Internet stack, our global, distributed Berkman Klein community is coming up with new ideas and testing them out. We are familiar with the private sector but not beholden or subordinate to its companies; we are rightly trusted by regulators and government officials to help articulate different visions of the public interest, and the changing technical landscape where regulators operate—a landscape that regulators in turn often can change.

And we are, first and foremost, a teaching and learning institution, offering clarity and conviction where possible, and ready to learn and adapt our views in the wake of new evidence or argument from within our community or outside of it.

The Internet, like the world it connects, is in a state of vertiginous change and challenge, and also, among many who study it, of pessimism. I'm proud of the work the Center's faculty, fellows, and larger community has undertaken to illuminate not only our anxieties but also our highest hopes, along with ideas and actions that might help realize those hopes. Our work has never been more relevant or urgent. I look forward to the year ahead, where we will be trying out not only new substantive ideas, but new frameworks to bring far-flung groups together, academic and not, to hear them out and get them going.



## Our Work


At the Berkman Klein Center, we address the most complex challenges at the intersection of technology and society, using a number of different methods.

Our innovative **educational programs** complement traditional modes of education for policymakers, developers, industry representatives, students, teachers, and the public, extending the reach of our work, and equipping current and future leaders with the skills they need.

Our work is categorized into **projects**, with each project team providing expertise and insight into critical issues of our time. We also build **tools** and platforms that enhance our research, and enable scholarship and activism around the world.

Through each of our projects and programs, we foster **networks and connections** across diverse communities and disciplines to conduct research, teach, learn, and share ideas.

The 2018-2019 year illustrated the direct impact of this multidimensional approach to the year's most interesting issues. Through our projects, tools, and programs, we addressed topics such as misinformation, content moderation, Internet censorship, and the ethics and governance of AI, among others. Our approach continued to leverage our research tools and methods, as well as our robust network of scholars, practitioners, lawyers, and others, to produce real-world impact.



*The Berkman Klein Center is committed to supporting and engaging in work with real-world impact while fostering an ethos of collaborative learning, experimentation, and open-minded inquiry.*

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# Programs

At the heart of the Berkman Klein Center are the individuals, institutions, and initiatives that bring people and ideas together. Since 1998, we have built a vibrant global community, in large part through institutional programs and network-building efforts, that provides meaningful opportunities for students, faculty, practitioners, and members of the public to engage with us, and with one another. Through our long-standing interdisciplinary programs, as well as newer initiatives, we experiment with modes and formats in efforts to deepen understanding, foster collaboration, and spark innovation.

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## AGTech Forum

State attorneys general (AGs) play an increasingly important role in establishing rules of the road for technology businesses and are well-positioned to act as first-movers on novel regulatory and enforcement decisions regarding applications of AI. Yet, despite the importance of state AGs, they lack access to the classic suite of regulatory tools available to federal agencies and to world-class technical expertise. Recognizing this gap between the power of AGs and their capacity to keep pace with around-the-corner technologies, the Center launched the **AGTech Forum**, a series of invitation-only, multi-day convenings at Harvard Law School to bring state AGs and their staffs up to speed on issues related to privacy, cybersecurity, and—as part of the Artificial Intelligence Ethics and Governance Initiative—AI and algorithms.



Salome Viljoen, Elizabeth Wilkins, (senior counsel in the Washington, D.C. Office of the Attorney General), Sara Cable (assistant AG at Office of the MA Attorney General), and Blake Bee (program counsel of the National Attorneys General Training & Research Institute Center for Consumer Protection), at the 4th AGTech Forum at Harvard Law School, February 2019.

With support from the National Association of Attorneys General and the Harvard Law School Attorney General Clinic, the AGTech Forum has laid the groundwork for a scalable mechanism to **provide guidance on tech policy issues** to an oft-underestimated dimension of our legal and political system.

Thirty-six offices have participated in at least one forum, held twice annually since 2017, with attendees representing a diverse set of AGs, chief deputies, division chiefs, and line attorneys, alongside thoughtfully selected technologists and legal experts drawn from academia, civil society, and industry. The two convenings focused on AI held in 2018–2019 invited AGs to learn about the impacts of these new technologies on a multitude of state enforcement and policy areas, particularly consumer protection and privacy, anti-discrimination and civil rights, antitrust and competition, labor rights, and criminal justice.

For more information about the AGTech Forum, contact Chris Bavitz ([cbavitz@law.harvard.edu](mailto:cbavitz@law.harvard.edu)) or visit [cyber.harvard.edu/research/AGTechForum](https://cyber.harvard.edu/research/AGTechForum)

## Assembly



Members of the 2019 Assembly cohort.

Assembly gathers a cohort of technologists, managers, and policymakers to confront problems related to emerging digital technologies. Last year's deeply interdisciplinary and diverse cohort of 19 participants came from industry, academia, government, and civil society, including from Google, Deepmind, Indigo Ag, University of Washington, University of Ottawa, the US Navy, and Open Data Charter.

Over three months in 2019, participants tackled the ethics and governance of artificial intelligence, engaging in an ideation process, learning from discussions led by professors from Harvard and MIT, and building projects during a collaborative development period.

Four projects tackling the ethics and governance of artificial intelligence.

- 1 "Kaleidoscope: Positionality-Aware Machine Learning" project interrogates the creation of classification systems.
- 2 "Surveillance State of the Union" highlights the risks of pursuing surveillance-related work in AI.
- 3 "Watch Your Words" examines the expansion of Natural Language Processing / Natural Language Understanding systems.
- 4 "AI Blindspot" offers a process for preventing, detecting, and mitigating bias in AI systems.



Over the last year, Assembly supported a 2018 alumni effort, the “Data Nutrition Project,” to share their work at two major conferences, SXSW and Open Government Partnership, and to further build out their technical prototype for a dataset nutrition label, with the aim to create better, more inclusive algorithms.

The AI Blindspot project from 2019 created a discovery process for technical teams to spot unconscious biases and structural inequalities.

For more information about Assembly, contact Hilary Ross ([hross@cyber.harvard.edu](mailto:hross@cyber.harvard.edu)) or visit [bkmla.org](http://bkmla.org)

## CopyrightX

The CopyrightX Summit featured critical discourse about cutting-edge issues shaping the copyright landscape, including blockchain digital rights management, authorship for works produced by artificial intelligence, the algorithmic copyright enforcement of automated anti-piracy systems, and the impact of the European Union's new copyright directive.



CopyrightX taught by Professor Terry Fisher is a twelve-week networked course, offered from January to May each year under the auspices of Harvard Law School, the HarvardX distance-learning initiative, and in collaboration with BKC. The course explores the current law of copyright; the impact of that law on art, entertainment, and industry; and the ongoing debates concerning how the law should be reformed.

Now in its seventh year, CopyrightX provided twelve weeks of rigorous distance learning to a diverse cohort of 350 students from 55 countries around the world, over half of whom were female. In addition to lawyers and law students, the 2019 cohort included forty-eight archivists and librarians, fifteen editors, writers and authors, nine visual artists, six photographers, and five software de-

velopers. The 2019 teaching fellows, the majority of whom were current HLS students or recent HLS graduates, produced over twelve new case studies, ranging from the shifting landscape of cumulative digital authorship through user-generated content to the copyrightability of tattoos etched on professional athletes and reproduced on their video game avatars. The CopyrightX community welcomed four new CopyrightX affiliates: the Copyright Institute of Uganda, the University of Trento, the University of Warsaw, and Vilnius University, Lithuania.

Halfway through the semester, CopyrightX hosted Academy Award-winning Black Panther costume designer Ruth Carter, who shared her creative journey, the design process, and how her *Black Panther* costumes subvert centuries of colonial gaze with the redemptive counter-mythology of Wakanda, black self-determination, and Afrofuturism. At the end of the semester, CopyrightX students, alumni, teaching fellows, and affiliate leaders converged on Cambridge, Massachusetts for the annual CopyrightX Summit.

For more information about CopyrightX, visit [copyx.org](http://copyx.org)

## Cyberlaw Clinic

The Cyberlaw Clinic provides high-quality, pro-bono legal services to appropriate clients on issues related to technology (including speech, privacy, and intellectual property). Harvard Law School students enroll in the Clinic for credit and enhance their preparation for high-tech practice by working on real-world litigation, client counseling, advocacy, and transactional / licensing projects and cases. The Clinic strives to help clients achieve success in their activities online, mindful of (and in response to) existing law. The Clinic also works with clients to shape the law's development through policy and advocacy efforts. The Cyberlaw Clinic was the first of its kind, and it continues its tradition of innovation in its areas of practice.

*The skills that I have acquired in the clinic have helped me become a more confident lawyer and more effective advocate.*

*-Alexandra Noonan, J.D. '19*

The 2018-19 academic year was a busy one for the Clinic, which has grown dramatically in recent years. Highlights included: filing five amicus curiae briefs in cases before the Unit-

ed States Supreme Court and federal circuit courts of appeals; success in the latest round of Digital Millennium Copyright Act anti-circumvention exemption proceedings before the United States Copyright Office; deep engagement with timely questions about platform responsibility for harmful speech; and development of a set of resources for technologists and artists collaborating on art projects that employ machine learning and artificial intelligence. Students in the Clinic helped clients to achieve the elimination of the "seven words" policy for registration of .us domain names and facilitated the launch of a website that provides resources for inventors about patent law and the "adventures and misadventures" of those who found startups and develop new technologies.

At an operational level, the Clinic team made significant efforts during the 2018-19 academic year to refine the Cyberlaw Clinic Seminar, which serves as the classroom analogue to direct client representation and student fieldwork. The Seminar has developed into a robust course that complements students' work on clinical projects, offering opportunities for substantive learning about legal issues at the heart of the Clinic's practice; engagement with elements of legal



practice that are particularly relevant to high-tech practitioners; and reflection on the Clinic's docket of projects. Students in the Seminar engage in in-class discussions, run "case rounds," and participate in role-play and similar exercises throughout the semester.

The Cyberlaw Clinic is entirely student-focused in its operations and relies on students to perform work for clients. Of note, the Cyberlaw Clinic enrolled 32 students in fall 2018, 2 continuing students in winter 2019, and 32 new and continuing students in spring 2019, for a total of 66 student slots during the 2018-19 academic year—the program's biggest cohort ever. Those students enrolled for a total of 208 credits over the course of the year. Overall, the Clinic's supervising attorneys managed nearly 10,400 hours of student work.

Managing Director Chris Bavitz and Assistant Director Jessica Fjeld with students Maia Levy Daniel (Fall 2018) and Eren Sozuer (Spring 2019).

For more information about the Cyberlaw Clinic, contact Chris Bavitz ([cbavitz@law.harvard.edu](mailto:cbavitz@law.harvard.edu)) or visit [clinic.cyber.harvard.edu](http://clinic.cyber.harvard.edu)

## Techtopia

Techtopia's goals in its inaugural year were to build a multidisciplinary community of faculty and students across Harvard around the biggest challenges in tech today, and to supplement the traditional disciplinary education model by getting students to build concrete solutions to real-world problems on teams with the diversity of opinions necessary to generate holistic solutions. The program drew a cohort of 17 students from an applicant pool of 80. The cohort consisted of five undergraduate and twelve graduate students from nine Harvard schools (FAS, HBS, HDS, HLS, HKS, GSD, GSE, SEAS, and the College). The Techtopia faculty and friends community grew to over 45 faculty, senior researchers, fellows, and staff across Harvard.

Students engaged in three programmatic activities: First, students participated in ten bi-weekly seminars led by faculty from around the university on topics under the ethics and governance of AI umbrella. Second, 14 of the 17 students worked in groups with faculty advisers to build projects exploring how emotion-detection AI and affective computing might change our relationship with society and technology, how we might make privacy and data literacy more accessible to communities online, and how local governments procure automated decision making

technologies. Finally, students participated in private and public events, including events with Mark Zuckerberg, Kent Walker, and the broader BKC and Harvard communities.

The Techtopia faculty and friends community engaged in a number of ways, including leading student seminars, hiring Techtopia students as research assistants, becoming mentors to individual students, and assisting with the design and development of Techtopia more generally. The community also served as a vehicle to connect those at Harvard conducting similar activities within different disciplines.

Overall, the inaugural year of Techtopia was a resounding success, in particular for the student cohort. Through feedback surveys, students have said that this cohort has become "a family" and "the best friends they've made at Harvard." The program also started breaking down preconceived notions of hierarchy and judgments between different disciplines. For example, one highly technical PhD candidate in the program noted that his thinking about product development was radically altered by the Kennedy School, philosophy, and Divinity School students in the cohort. In the 2019-20 academic year, the program continues under the Assembly umbrella, as the "Assembly Student Fellowship."



As part of the Techtopia program, students attended bi-weekly seminars led by faculty from across the University.

For more information about the Assembly Student Fellowship, contact Hilary Ross ([hross@cyber.harvard.edu](mailto:hross@cyber.harvard.edu)) or visit [bkmla.org](http://bkmla.org)





## Spotlight

# Ethics and Governance of Artificial Intelligence Initiative

The Ethics and Governance of AI Initiative takes an **interdisciplinary and collaborative approach** to explore and address many of the challenges posed by artificial intelligence (AI) with a focus on educating key stakeholders, including policymakers, technologists, scholars, and leaders in the private sector, so that they can best navigate AI's risks and opportunities.

The AI Initiative spans research topics including media and information quality, algorithms and justice, global governance and inclusion, and more. This work has been incorporated into many projects across the center including Assembly, Youth and Media, Tectopia, Internet Governance, and Media Cloud.

Over the last year, the Ethics and Governance of AI Initiative fostered and created impact across a number of communities. We convened and educated US attorneys general and their senior staff about salient emerging issues pertaining to AI and the law. Our work informed policy efforts at the national level across multiple countries, as well as enabled the incubation of new institutions focused on AI governance. International and multistakeholder institutions, such as the OECD, United Nations, Partnership on AI, and World Economic Forum, drew from our work and engaged researchers and fellows within our community.

Read on for a few major milestones from our key research areas from over the last year.

## Media and Information Quality

The Media and Information Quality track brings together diverse stakeholders to map the effects of automation and machine learning on content production, dissemination, and consumption patterns, while evaluating the impact of these technologies societal attitudes and behaviors and democratic institutions.

- ▶ Released **groundbreaking work** on the relationship between misinformation on-line, elections, and healthy democracies, published in *Network Propaganda*. The research methodology is being replicated in other countries, including France, Germany, and Colombia.
- ▶ Published a new **methodology** for measuring and detecting bots in the online ecosystem to improve tracking of coordinated, automated networked propaganda campaigns.
- ▶ Helped conceive of and implement the **AI and the News Open Challenge**, which supported seven distinct projects aimed at shaping the impact of AI on the field of news and information.



## Global Governance and Inclusion

The Global Governance track explores the ethical, legal, and regulatory challenges associated with the development, deployment, and use of AI around the world, with an emphasis on the Global South. The track emphasizes direct engagement with policymakers and AI developers to create resources and frameworks to support the development and deployment of AI for the public good.

- ▶ Offered substantial input on the German National AI Strategy through participation on the German Digital Council, convened and led by Chancellor Angela Merkel, on which BKC Executive Director Urs Gasser serves as a member.
- ▶ Provided expert guidance to the OECD's AI Governance Expert Group, which proposed high-level **AI principles** adopted by 42 countries.
- ▶ Advised high-level policymakers and influenced national AI strategies working directly with global leaders such as the ITU's Global Symposium for Regulators, the OECD's Group of Experts on AI, and the United Nations' High Level Committee on Programmes.
- ▶ Mapped the **human rights implications** of AI technologies for the Canadian government.
- ▶ Supported the formation of new AI-governance research institutions in Singapore, Thailand, and Taiwan.
- ▶ Helped to incubate the Centre for AI and Data Governance at SMU School of Law in Singapore.

# Algorithms and Justice

The Algorithms and Justice track explores ways in which government institutions incorporate AI, algorithms, and machine learning technologies into their decision-making, with a focus on the criminal justice system. Our work examines ways in which development and deployment of these technologies by both public and private actors impact the rights of individuals and efforts to achieve social justice.

- › Hosted two **AGTech Forums** on AI and cybersecurity issues, educating state attorneys general and their senior staff about emerging AI and digital platform issues.
- › Prepared to launch the Risk Assessment Tools Database, the most comprehensive dataset of risk assessment tools used in every county in the United States, including information about tool development, testing, relevant case law, and more.

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## Educational Activities

As a countervailing force to the landscape of larger private and public sector efforts driving the development of AI, the initiative includes public-interest oriented educational efforts, convening diverse perspectives and expertise, and translating scholarship into actionable guidance and creating engagement forums for faculty, students, and practitioners.

- › Promoted AI and ethics education through programs like Assembly and Techtopia, which prepare current and future public and private sector leaders to better understand and respond to AI's challenges.
- › Created a pipeline of case studies through the Challenges Forum, exploring how large and small organizations have faced and addressed ethical issues in the development, deployment, and use of AI technologies.
- › Fostered interdisciplinary collaboration via cross-university efforts, including a Harvard/MIT course on the Ethics and Governance of AI and a joint AI fellowship with the Edmond J. Safra Center for Ethics.

As a hybrid research effort and philanthropic fund, the **Ethics and Governance of Artificial Intelligence Initiative** has supported a broad range of third-party projects and organizations which collectively seek to ensure that technologies of automation and machine learning are researched, developed, and deployed in a way that vindicate social values of fairness, human autonomy, and justice.

For more information about the Ethics and Governance of AI Initiative, contact Urs Gasser ([ugasser@cyber.harvard.edu](mailto:ugasser@cyber.harvard.edu)) or visit [cyber.harvard.edu/topics/ethics-and-governance-ai](https://cyber.harvard.edu/topics/ethics-and-governance-ai)

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# Projects & Tools

The Berkman Klein Center re-envision the boundaries of scholarly research related to Internet and society, engaging not only in traditional academic research, but building tools and platforms to expand knowledge, and growing networks of practitioners and researchers working in the public interest.

Our projects focus on a wide range of issues, addressing complex questions through a variety of methods. We conduct research, teach, learn, and share ideas, and foster networks and connections across diverse communities and disciplines. We build tools and platforms that support our work and serve a broad constituency of researchers and practitioners.

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## Berklett Cybersecurity

Since 2015, the Berklett Cybersecurity project has convened a group of outside experts from industry, academia, and government in a series of private meetings aimed at exploring and re-evaluating the roles and responsibilities of the US government and industry in promoting cybersecurity and ways to re-establish trust.


In 2018-2019, Berklett explored a new format in its meetings, centering discussion around “future-oriented scenarios.” The project team developed a series of five hypothetical scenarios, set 5-10 years in the future, based around applications of emerging technologies that are likely to pose profound questions for national security and civil liberties.

The scenario discussions yielded some surprising insights. Although planning for the future is one of the hallmarks of the traditional defense and national security processes, it was striking (to members of the project team) that few people seem to be using the same process for considering how techno-

logical trajectories will pose oversight and civil liberties challenges. It seems more likely for these types of challenges to be dealt with on an ad hoc basis after technological creep or when an issue has come to a head. In all, the team found the scenarios to be a useful tool for driving discussion beyond the usual talking points.

In addition to the scenario-based discussions, the Berklett project team successfully placed a number of op-eds, papers, and other written publications in *The New York Times*, *Harvard Business Review*, the Neural Information Process Systems conference, *Economic & Political Weekly*, and *Just Security*.

In 2019-2020, the project team is expanding efforts to a new topic: government and private sector responses to disinformation and foreign influence.



For more information about Berklett Cybersecurity, contact David O'Brien ([dobrien@cyber.harvard.edu](mailto:dobrien@cyber.harvard.edu)) or visit [cyber.harvard.edu/research/cybersecurity](https://cyber.harvard.edu/research/cybersecurity)

## Global Access in Action

Global Access in Action (GAiA) is a global-health non-profit organization focused on improving access to health technologies in low- and middle-income countries. Its team of Harvard Law School faculty, lawyers, policy analysts, and affiliates is committed to expanding access to life-saving medicines by conducting action-oriented research, supporting breakthrough initiatives, and facilitating interdisciplinary stakeholder dialogue.

GAiA is implementing a multifaceted pilot program in sub-Saharan Africa, providing technical advice to local governments on public health-sensitive legal, policy, and regulatory reform. As part of this program, GAiA is working with its partners to demonstrate a new falsified-drug detection technology that, in conjunction with other complementary drug-quality monitoring systems, can help to reduce the morbidity and mortality associated with treatment failure from the use of falsified medicines. In concert with public health initiatives, such technologies can help to reduce the regional burden of communicable and non-communicable disease by simplifying the identification of falsified medicines. The initial country participants were Namibia, Malawi, and Mozambique.

GAiA is currently focusing on the costs of trade and regulatory barriers to access to medicines: tariffs, non-tariff barriers and procedural and regulatory impediments that add costs to public health systems and adversely affect public health outcomes.

*GAiA's position as a neutral party bridging the worlds of regulation, academia, industry, and public health makes it an ideal forum for sharing and developing innovative solutions.*

GAiA seeks to enhance an industry-policy maker conversation to find pragmatic solutions to healthcare challenges. The GAiA speaker series at HLS and a one-day conference on drug pricing last October encouraged a cross-fertilization of ideas among academic institutions and the community at large. The one-day conference "Drug Pricing Policy: From Development to Delivery" explored the current pharmaceutical pricing landscape by bringing together leaders from the pharmaceutical industry, policymakers, legal practitioners, and scholars to engage in novel, interdisciplinary discussions to better understand current challenges and articulate best practices to address these issues.



GAiA, represented by BKC co-director William "Terry" Fisher (fifth from right, front) and BKC fellow Kat Geddes (fourth from right, front), launched handheld near-infrared spectrometers in Lilongwe, Malawi with the Pharmacy Medicines and Poisons Board of Malawi.

For more information about Global Access in Action, contact Terry Fisher ([tfisher@law.harvard.edu](mailto:tfisher@law.harvard.edu)) or visit [globalaccessinaction.org](http://globalaccessinaction.org)

# Global Network Initiative

The Global Network Initiative published *Disconnected: A Human Rights-Based Approach to Network Disruptions* in May 2018.



BKC is a founding member of the Global Network Initiative (GNI), a multistakeholder initiative composed of companies, academics, socially responsible investors, and civil society organizations that is focused on advancing human rights issues in the information and communication technology sector. In fall 2018, GNI celebrated its tenth anniversary, a major milestone for a multistakeholder organization. Jessica Fjeld, Assistant Director of the Cyberlaw Clinic, represents BKC on GNI's board of directors and is a member of its Accountability, Learning, and Policy Committees.

Diversity is a key strategic goal for GNI, and the organization is making significant strides. In spring 2019, Fjeld spearheaded the formation of a Women's Group of the board. The organization has also expanded its membership in the Global South, with new members, including the Collaboration on International ICT Policy for East and Southern Africa, Digital Empowerment Foundation, NetBlocks Group, Software Freedom Law Centre, India, and Internet Sans Frontières, the executive director of which is an incoming BKC Fellow. GNI was also pleased to welcome its first non-US/Europe-based company, LINE Corporation, as an observer.

GNI worked diligently last year to engage governments and other key stakeholders on rights-respecting laws and policies, including through 17 public sessions; issuing the report, "Disconnected: A Human Rights-Based Approach to Network Disruptions"; promoting rights-respecting approaches to tackling online extremism at sessions hosted by the UN and the Council of Europe; and engaging in legislative initiatives, including a draft intermediary liability law in Argentina, the French fake news law, and the Digital Rights and Freedom bill in Nigeria.

For more information about our work with the Global Network Initiative, contact Jessica Fjeld ([jfjeld@cyber.harvard.edu](mailto:jfjeld@cyber.harvard.edu))

## Harvard Open Access Project

The Harvard Open Access Project (HOAP) fosters open access (OA) to research within Harvard and beyond, undertakes research and policy analysis on OA, and publishes timely and accurate information about OA itself. HOAP consults pro bono on OA issues with universities, funders, societies, publishers, governments, tool-builders, start-ups, and researchers. HOAP manages the Open Access Tracking Project (OATP), a service reporting OA-related news and commentary to the global OA community and organizing it for easy searching and sharing. HOAP develops TagTeam, an open-source tagging platform now supporting OATP and hundreds of other projects. It maintains a widely endorsed guide to good practices for university OA policies, and contributes regularly to the Open Access Directory, the wiki-based encyclopedia of OA.

For more information about the Harvard Open Access Project, contact Peter Suber ([peter\\_suber@harvard.edu](mailto:peter_suber@harvard.edu)) or visit [cyber.harvard.edu/research/hoap](http://cyber.harvard.edu/research/hoap)

*BKC supported an Open-Access policy compliance rate of 93%. BKC's published research has received over 50,000 downloads from DASH (Harvard University's open access repository) alone.*

## Harmful Speech

The research team working on the harmful speech project has initiated a project with the Wikimedia Foundation to study how editors on Wikipedia address potentially harmful content. The study is designed to provide an overview and critical assessment of English Wikipedia content moderation practices and policy implementation. It includes interviews with Wikipedians and a quantitative analysis of content on the platform, as well as a review of the regulatory models that shape policy decisions and the development of a taxonomy of speech targeted for moderation. This research will contribute to ongoing efforts to understand the strengths and weaknesses of different strategies and models for moderating content on digital platforms, and will support efforts to educate lawmakers about the scale and efficacy of community-reliant models for removing harmful and illegal content. It will also provide a benchmark for future work to better understand the effects of content removal laws and other regulatory trends on these community processes.

For more information about the Harmful Speech project, contact Rob Faris ([rfaris@cyber.harvard.edu](mailto:rfaris@cyber.harvard.edu)) or visit [cyber.harvard.edu/research/harmfulspeech](http://cyber.harvard.edu/research/harmfulspeech)

## Internet Governance

BKC continued to actively explore issues of Internet governance over the 2018–2019 academic year. As in years past, faculty, staff, and fellows from BKC were organizers and active participants in several key global multistakeholder conferences. At the Internet Governance Forum in Paris, BKC-led sessions examined topics related to the digital economy, harmful speech online, and artificial intelligence and inclusion. At RightsCon in Tunis, BKC hosted a series of interactive activities, panels, and workshops, including a session entitled The Future of Human Rights in the Governance of Artificial Intelligence, exploring how human rights frameworks can be integrated into the governance of artificial intelligence and machine learning technologies.

Much of our Internet governance work over the 2018–2019 academic year was focusing on next-gen technologies such as AI, examining which lessons learned from the world of Internet governance can apply to some of the most recent governance issues related to digital technologies. For example, Urs Gasser and Carolyn Schmitt published a book chapter that highlights some interesting “bottom-up” dynamics that demonstrate the potential of professional norms as inspiration for governance approaches to AI. The

Cyberlaw Clinic launched the Principled Artificial Intelligence Project, which maps out and analyzes the current landscape of AI principles and guidelines, and builds upon previous research at the Center on digital constitutionalism.

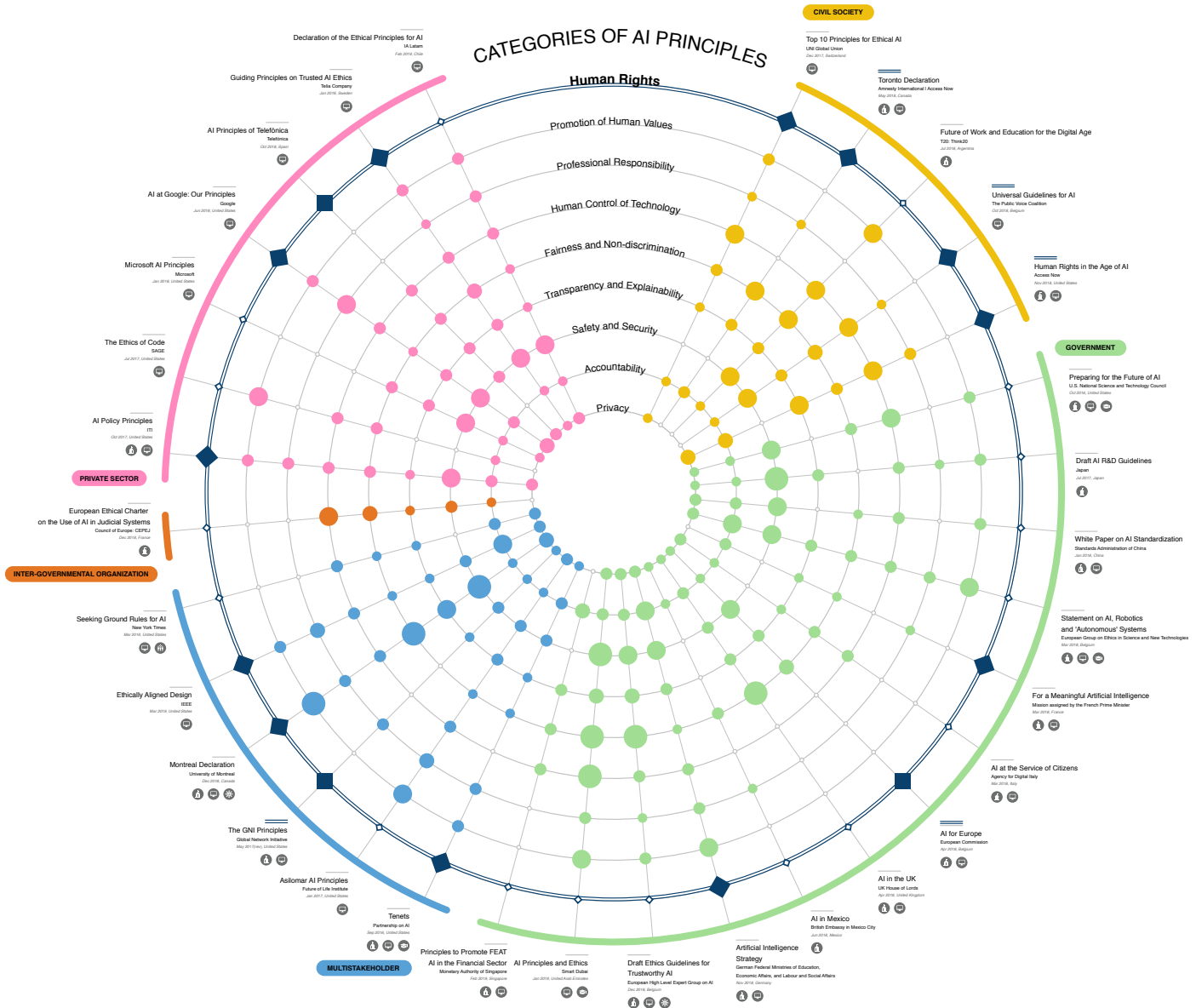
Additionally, BKC faculty, fellows, and staff advised high-level policy-makers and influenced national AI strategies, working directly with global leaders such as Chancellor Angela Merkel, the ITU’s Global Symposium for Regulators, the Canadian government, the OECD, and the United Nations’ High Level Committee on Programmes, as they developed AI governance principles and national strategies. Domestically, BKC hosted two AGTech Forums on AI and cybersecurity issues, educating state attorneys general and their senior staff about emerging AI and digital platform issues. Addressing AI governance also requires working with the private sector, and BKC hosted multiple Challenges Forum workshops where members of the community worked with 10 organizations, exploring how they have faced and addressed ethical, social, legal, and policy challenges in the development, deployment, and use of AI technologies.



The German Digital Council’s ten experts advise the German government on digitalization.

(opposite) This draft version of the Principled Artificial Intelligence visualization currently includes 32 principles documents. The team, led by Jessica Fjeld, collected up to 80 data points about each one, and intends to publish a final version of the visualization with an updated list of documents in 2019–2020. A higher resolution version of this graphic can be found at [ai-hr.cyber.harvard.edu](https://ai-hr.cyber.harvard.edu)





For more information about the Internet Governance Project, contact Urs Gasser (ugasser@cyber.harvard.edu) or visit [cyber.harvard.edu/research/internet\\_governance](http://cyber.harvard.edu/research/internet_governance)

## Internet Monitor

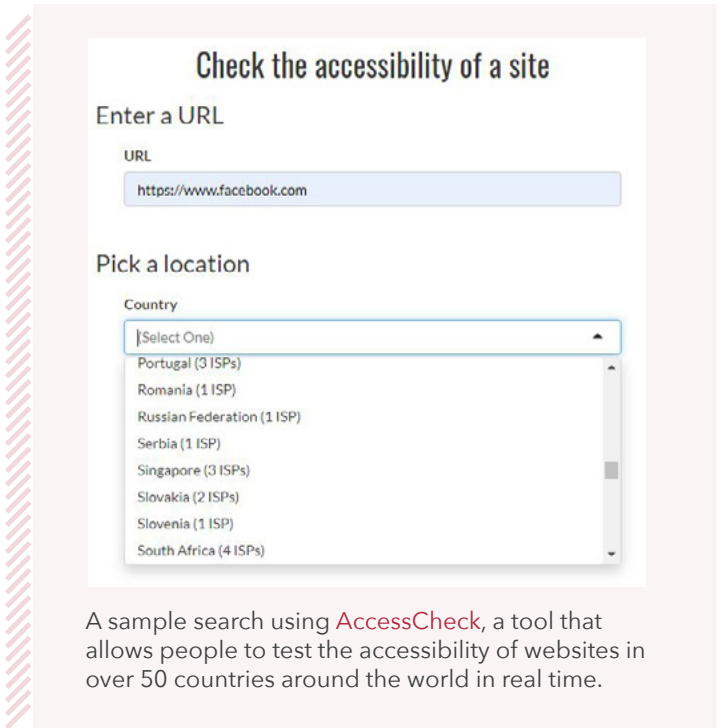
The Internet Monitor project evaluates, describes, and summarizes the means, mechanisms, and extent of Internet content controls and Internet activity around the world.

Along with five partner organizations Internet Monitor launched in summer 2019 [AccessCheck](#), a publicly available website that allows people to test the accessibility of websites in over 60 countries around the world in real time. This is the first time that such a tool has been available with a broad range of consistent data with disclosed methodologies.

AccessCheck combines data from virtual private network endpoints, virtual private servers, and measurements collected by the Information Controls Lab (ICLab) and by the Open Observatory of Network Interference's (OONI) [OONI Probe](#).

This tool is intended to inform and support the efforts of those engaged in related public interest work, including journalists, academic researchers, and civil society organizations. Near real-time test results are available to all users of the tool. Unregistered users of AccessCheck will be able to see the results of previous tests run by authenticated users, and verified users who are signed into their accounts can run new tests.

For more information about the Internet Monitor, contact Casey Tilton (ctilton@cyber.harvard.edu) or visit [thenetmonitor.org](https://thenetmonitor.org)



Over the past year, Internet Monitor provided expert analysis on the state of global Internet freedom via its Research Bulletin series:

[Censorship and Collateral Damage: Analyzing the Telegram Ban in Iran](#), by research affiliate Simin Kargar and Psiphon's Keith McManamen, analyzes the aftermath of the Telegram ban in Iran and presents detailed data on the performance of Psiphon, one of the most widely used circumvention tools among Iranians. The bulletin concludes by reviewing the overarching Internet policies in Iran behind the Telegram ban.

[Internet Censorship and the Intra-regional Geopolitical Conflicts in the Middle East and North Africa](#), by Helmi Noman, investigates how adversarial relationships between states in the Middle East and North Africa (MENA) translate into Internet censorship practices. Based on analysis of Internet censorship data collected from 16 countries, the study finds that it is becoming increasingly common for governments in the MENA region to block content that originates from or is affiliated with rival states in the region.

## Internet Robustness

The Internet Robustness project develops software to safeguard the promise of the URL, or “Uniform Resource Locator,” that information placed online can remain there, even amid network or endpoint disruptions. The heart of the project is Amber, a proof of concept for the “Mirror-As-You-Link” protocol initially suggested by Jonathan Zittrain.

The project publicly launched Amber in 2016 within the official WordPress.org plug-in directory and Drupal.org module directory. When installed on a website, Amber detects when the website publishes a new link and automatically makes a backup of the content at the other end of that link if the linked site does not object. If a visitor to the website clicks on a link that is unavailable, Amber notifies the user about the broken link and presents the mirrored page; the visitor is then able to view the page when it would otherwise be inaccessible.

In line with the commonplace that “lots of copies keeps stuff safe,” the software enables Amber users to store snapshots using a combination of the following third-party storage and archiving systems: the Internet Archive, Perma, and Amazon Simple Storage Service (Amazon S3). Examples of the types of websites that have downloaded Amber include a legal resources website, an academic study guide clearinghouse, a journalist trainer, a political fact-checking and archiving group, an Internet history digital archive, a Vietnamese activist blog, a European academic job listing website, a fair-use blogger, and a Nigerian storytelling archive. Since 2016, the WordPress version has been downloaded 2,294 times and the Drupal version has been downloaded 1,669 times.

For more information about the Internet Robustness project, contact Jonathan Zittrain ([zittrain@law.harvard.edu](mailto:zittrain@law.harvard.edu)) or visit [cyber.harvard.edu/research/internetrobustness](http://cyber.harvard.edu/research/internetrobustness)



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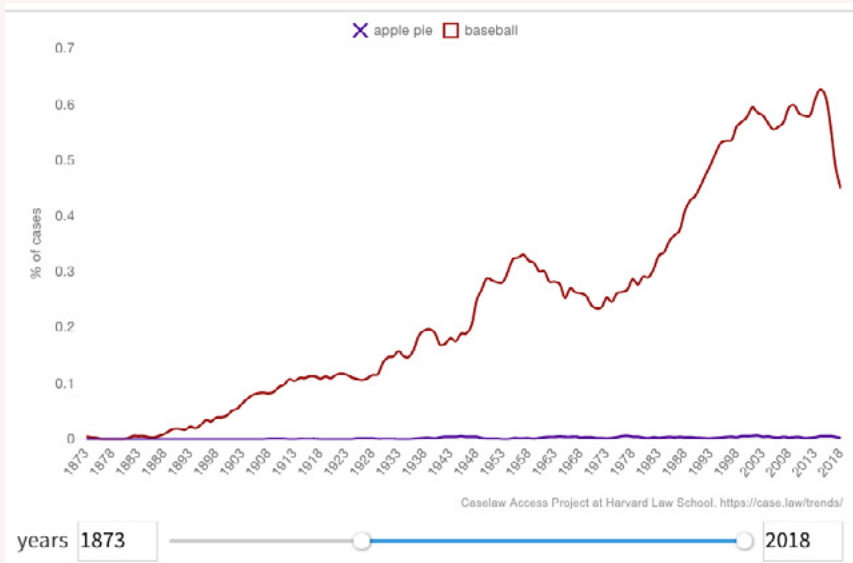
## Library Innovation Lab

### Caselaw Access Project

The ultimate goal of the Caselaw Access Project is to provide free public access to US case law for the benefit of scholars, researchers, governments, entrepreneurs, the legal community, and the public. The project team has completed scanning approximately 40 million pages and processing over 30 million pages. Last year, the team released an API and bulk data service at [case.law](http://case.law), as well as a public, linkable index of all the cases at [cite.case.law](http://cite.case.law), and a variety of helpful tools and resources, including an ngram viewer at [case.law/trends](http://case.law/trends). The project is led by Director and Faculty Chair Jonathan Zittrain.

### H2O

The Harvard Law School Library Innovation Lab and BKC have continued to collaborate to offer the suite of **H2O classroom tools** with a particular emphasis on free, adaptable digital casebooks. These online casebooks can be curated to fit the faculty's pedagogy and to draw on a growing corpus of diverse materials. The Library Innovation Lab team has worked to enhance the performance and usability of the H2O platform and to prepare for continued growth and adoption among faculty and other users.



A demonstration of the **historical trends** feature of the Caselaw Access Project, which provides free access to digitized versions of over 350 years of US caselaw

### Perma.cc

**Perma** is an open-source user-directed solution to link rot. It enables authors, journals, courts, and publishers to create archived versions of cited web sources and to direct readers to those archives using permanent, unique URLs. To ensure resiliency, the archive will be distributed among multiple “mirror” partners—principally libraries—that dedicate physical server capacity to the preservation effort. Perma is focusing initially on law journals and court opinions, where the problem is acute. The project is led by Jonathan Zittrain and a team at the Harvard Law School Library. Perma currently counts over 200 library partners, including a majority of American law schools; over 1,000 journals, courts, and faculty members; and 20,000 individual account holders. Together, they have created roughly 1 million Perma Links. Perma’s use is encouraged by the Bluebook and the Chicago Manual of Style, and Perma is in the midst of fulfilling a major grant from the Institute of Museum and Library Sciences to scale the service beyond academic legal scholarship and court opinions.

For more information about the Library Innovation Lab, contact Adam Ziegler ([aziegler@law.harvard.edu](mailto:aziegler@law.harvard.edu)) or visit [lil.law.harvard.edu](http://lil.law.harvard.edu)

## Lumen

Lumen is an online database of takedown requests related to online content. Lumen's primary goals are to educate the public about removal requests and takedown notices that are sent to Internet publishers, search engines, and others; to provide as much transparency as possible about such requests in terms of who is sending them, why, and to what effect; and to facilitate research on the notices.

In 2018-2019, Lumen received over two million new notices, averaging approximately 6,000 notices per day. Its data corpus grew to include slightly fewer than eleven million notices referencing just under four billion URLs. The project website was visited approximately twelve million times by users from virtually every country in the world—even apparently nine from Antarctica—but primarily by users in Europe, Asia, and North America, with the US, Russia, India and Germany the most common countries of origin. An unprecedented number of researchers, journalists, and public interest groups began or continued to work with the Lumen database. Additionally, Professor Eugene Volokh at UCLA continued to work closely with Lumen's data for his ongoing research project studying possibly falsified US court orders.

At the technical level, Lumen also continued to work with Google and Twitter, the database's two largest sources of notices by volume, to help them integrate more of the notices they receive into Lumen's API submission protocols. Removal requests for all Google products are now submitted to Lumen through the API, an important milestone for the project.

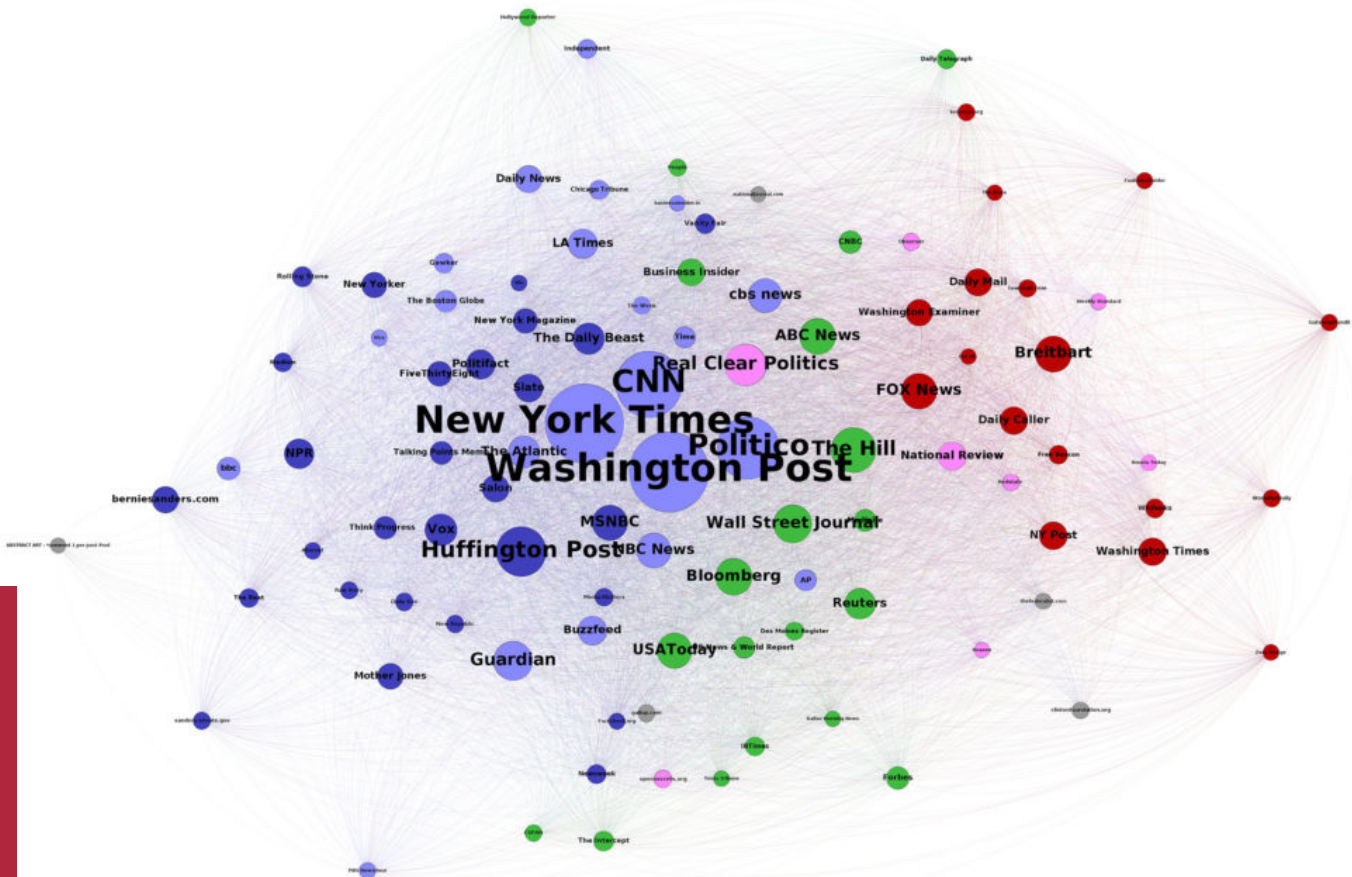
For more information about Lumen, contact Adam Holland (aholland@cyber.harvard.edu) or visit [lumendatabase.org](http://lumendatabase.org)

## Media Cloud

Media Cloud is an open platform for media analysis. The platform is jointly developed and maintained by BKC and the MIT Media Lab's Center for Civic Media, and is led by Yochai Benkler and Ethan Zuckerman. Media Cloud collects and archives articles published by tens of thousands of media sources worldwide and offers an open platform for researchers, scholars, and practitioners to explore digital media coverage across different regions and topics. Users are provided a set of analytical tools that are used to extract and analyze data. All are freely available to the public and implemented through an open-source code base.

Over the past year, the Media Cloud has continued to expand data collection and improve upon the suite of analytical tools provided to users. The tool is currently serving a broad community of users from academia, non-profits, media outlets, and other professionals conducting research on topics ranging from health communication and criminal justice reform to politics and current events. More than 2,000 new users signed up in the past year alone. Several dozen articles that draw upon data and analysis from Media Cloud were featured in media, including articles in the *Washington Post*, the *Atlantic*, *BuzzFeed*, the *Columbia Journalism Review*, the *Boston Review*, *Global Voices*, and *FiveThirtyEight*.

The Media Cloud team at the BKC continues to focus attention on the role of media ecosystems in political discourse. Released in the fall, *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics* by Yochai Benkler, Robert Faris, and Hal Roberts was named one of the best books of 2018 by the *Guardian*. This book extends the team's research on the 2016 US presidential election and explores the interplay of media structure, polarization, media manipulation, and disinformation in American politics. The book, which draws upon the analysis of over four million stories



Media Cloud enabled the research for “Network Propaganda.” This model shows one instance of asymmetric polarization drawn from the top 100 most-cited media sources. The blue represents left-leaning media outlets, green show centrist media outlets, and red are right-leaning outlets.

across multiple platforms, pushes against conventional wisdom that disinformation and dysfunction is primarily rooted in new technology, and describes the historical, social, and political basis for current media dynamics. *Network Propaganda* has been widely cited in popular media and in academic publications, and has featured prominently in reframing debates around politics, polarization, and disinformation.

Additional research efforts in the past year have focused on developing new data sources and advancing techniques to study political media ecosystems. The team employed new measures for assessing the positioning of media sources in the political spectrum that allow them to track shifts in media partisanship over time and in response to political events. To study insularity in media ecosystems, the team is applying sophisticated

social network models. BKC was selected as one of the research teams to participate in the research program on the impact of social media effects on democracy and elections run by Social Science One and the Social Science Research Council in conjunction with Facebook. Another major thrust over the past year is to apply the conceptual and methodological approaches used to study political discourse to other countries. The team is currently supporting the elaboration of studies focused on Germany, France, Spain, and Colombia.

For more information about Media Cloud, contact Rob Faris (rfaris@cyber.harvard.edu) or visit [mediacloud.org](http://mediacloud.org)

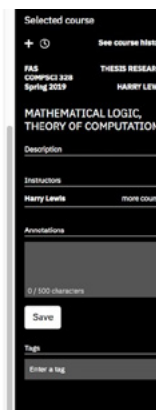
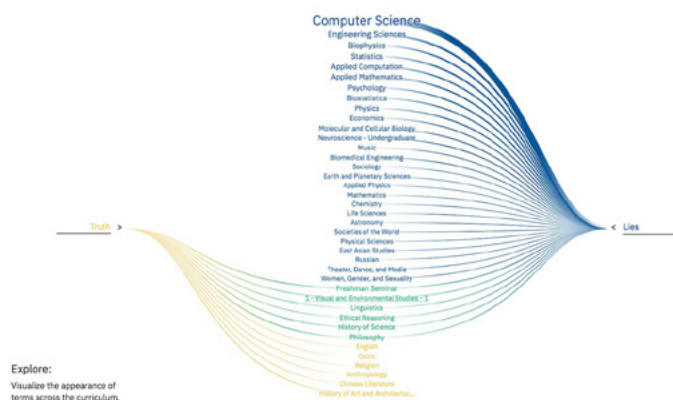


## Spotlight

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# metaLAB (at) Harvard

In 2018–2019, metaLAB continued its exploration of intersections in technology, the arts, and the humanities. With interests spanning new media, digital scholarship, and technology in human and more-than-human worlds, metaLAB’s projects can be sorted into three categories: Collections, Art & Design in Practice, and Networks & Natures. The lab’s portfolio for 2018–2019 encompasses all three areas.



## Collections: Curricle—a new course-selection platform for Harvard

It was a watershed year for metaLAB's largest project, the university course-selection platform **Curricle**. Serving as a complement to Harvard's online course catalog, Curricle uses data visualization and other dynamic tools to encourage discovery and interdisciplinary study. Alexandra Dolan-Mescal joined the team in the fall as project manager and UX designer to lead Curricle's transition from an experimental prototype to a tested, public platform. She oversaw Curricle's rapid final development, testing, and refinement before a release to the student community in spring 2019. In this initial release, Curricle was used by 2,355 undergraduates, and the most common user rating was 4 out of 5 stars. Working closely with associate director Matthew Battles and creative technologist Jessica Yurkofsky, and in collaboration with BKC Director of Technology Sebastian Diaz, Dolan-Mescal led metaLAB's design team through the rigors of this release, the outreach effort to students, and the collection and analysis of crucial user feedback data now driving Curricle's second public release, scheduled for fall 2019. Battles, with visualization designer Kim Albrecht, is also developing a research platform, Curricle Lens, to analyze the history of the Harvard curriculum. Meanwhile, faculty director Jeffrey Schnapp is working with university leadership to develop pathways for Curricle beyond Harvard, while opening Harvard internally to more fluid access and sharing of data for research, administration, and public understanding across the university.

## Art & Design in Practice: AI + Art, Library Installations

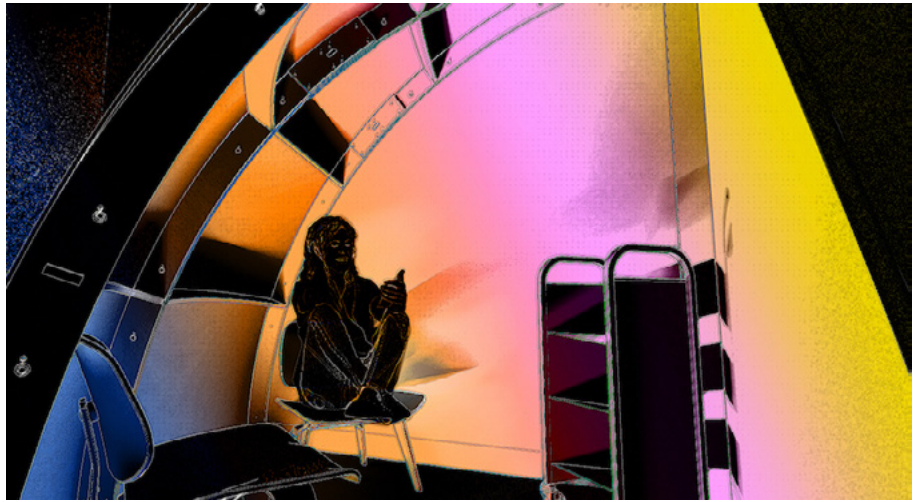
metaLAB's AI + Art portfolio matured into an impactful, many-faceted program of installations, talks, publications, and teaching. Led by metaLAB Senior Researcher Sarah Newman, the AI + Art initiative has carved out a meaningful space in the global discourse on philosophy, ethics, and human experience in the context of algorithms. To date, the team has produced 10 projects, staged more than 45 exhibitions in 11 countries, been covered in more than 25 articles, taught nine workshops and courses, and given over 50 public talks. The project continued to reach local audiences as well, through a partnership with Cambridge Public Library and MIT's Center for Art, Science, and Technology, which fostered a dynamic interactive installation art work (*Laughing Room*, by Jonny Sun, in collaboration with Hannah Davis, Nikhil Dharmaraj, and Christopher Sun) and a follow-up panel discussion open to the public. Response to the work has been enthusiastic, suggesting great potential for expanding the program of exhibitions, talks, and further engagement. This work has been conducted in dialogue with the Ethics and Governance of AI Initiative, and has received support from the Harvard Provostial Fund, an AI Grant, a Somerville Artist Grant, the MIT De Florez Fund, MIT CAST, and CAMIT Grants, and the US Embassy in Vienna, Austria.

Cambridge Public Library was the scene for another metaLAB collaboration, with colleagues from the Library Innovation Lab in the Law School. With funding from the Knight Foundation, the LIL-metaLAB team developed *Alterspace*, a concept for programmable sensory technology to animate



(opposite) Curricule visualizes the connections between different courses and syllabi to enable greater interdisciplinary study.

metaLAB's Alterspace, a collaboration between metaLAB and the Library Innovation Lab, gives library visitors the chance to create their ideal environment for meditating, reading, collaborating, playing, or whatever activity brings them through the library's doors.



libraries, making it possible for patrons to “check out” light, sound, and spatial qualities to suit their needs and moods. Through subsequent installations in the Somerville Public Library and Harvard Law Library, the team has refined the integration of such features with library programs and services, and is developing resources that will allow libraries to develop alterspaces of their own to suit their own conditions and communities. Alterspace is an experiment in digital placemaking and adaptive, emancipatory design in public spaces of all kinds.

### Explorations of the Natural World: Futurefood

Grounded in local landscapes and communities, metaLAB's work exploring relations between technology, design, and the natural world has borne fruit as well. Conceived by Matthew Battles with GSD alumnus and metaLAB affiliate Keith Hartwig, and developed with Jessica Yurkofsky, Futurefood explores possible scenarios for urban agriculture and food systems in light of climate change. With support from the Cambridge Arts Council, the Futurefood team partnered with local chefs and food producers to produce a series of workshops at Cambridge Public Library, in which resilient future foodstuffs—a beverage made from leftover bread; ice cream flavored with invasive plants; and treats made with honey from urban bees—inspired participants to sketch their own dreams for survival and flourishing in the midst of a collapsing climate. Elaborated

by artists in metaLAB's community, these visions are part of Untold Possibilities at the Last Minute. This is a group show, curated by the Cambridge Arts Council, featuring ten projects manifesting fear, hope, and resolve in responses to climate change.

Moving forward, metaLAB will continue to explore the social and cultural effects of emerging technologies, technology's roles in the natural world, and the exploration of information design in libraries, museums, and other institutions. The team is especially focused on interventions that foster public dialogue and benefit the common good, in collaboration with the BKC community and colleagues at Harvard and beyond.

Given metaLAB's funding sources, and serving BKC's mission as a university-wide research center, metaLAB's work with students extends beyond HLS. In 2018-19, metaLAB student affiliates came from the College and the Graduate School of Arts and Sciences, and the Graduate School of Design. In this, as in the two previous years, metaLAB has benefited from the contributions of undergraduate summer research fellows supported by Harvard College.

For more information about metaLAB, contact Matthew Battles ([matthew@metalab.harvard.edu](mailto:matthew@metalab.harvard.edu)) or visit [metalabharvard.github.io](https://metalabharvard.github.io)

## Network of Internet & Society Centers

BKC actively contributed to a number of activities by the Global Network of Internet & Society Centers (NoC) over the past academic year. NoC is a collaborative initiative among more than 100 academic institutions around the globe with a focus on interdisciplinary research on the development, social impact, policy implications, and legal challenges of the Internet.

BKC participated in a number of high-level symposia and helped to build capacity for Internet research centers across geographical and disciplinary contexts. In the fall of 2018, the IT Law Institute at Istanbul Bilgi University hosted the first Istanbul Privacy Symposium, which gathered an international and interdisciplinary group of privacy experts to discuss current issues on data privacy. The symposium included a number of experts from BKC and input from our researchers on agenda development. The theme of the symposium focused on “Data Protection and Innovations” and covered the GDPR’s effect on innovation as well as emerging privacy issues from transformational technologies like artificial intelligence, big data, and blockchain. In collaboration with Digital Asia Hub, BKC co-organized a major regional conference on “Disinformation and Discourse: Rebuilding Trust in Institutions, Platforms, and Civic Spaces” in Jakarta, Indonesia, co-hosted workshops with policy-makers in Thailand, and participated in the newly launched Fairness, Accountability, and Transparency (FAT\*) conference in Asia.

Throughout the year, BKC faculty, staff, and fellows organized and led conversations at global multistakeholder conferences. At RightsCon in Tunis, BKC hosted a series of interactive activities, panels, and workshops. During the conference, BKC utilized the DotPlot tool to visualize and map issues, interests, communities, and disciplinary backgrounds as a means of fostering connections among individuals and institutions from across the globe. Additional featured NoC sessions at RightsCon included insights from eight women from the NoC who shared their recent work and challenged colleagues to consider new ways of thinking about human rights in the digital world, as well as an interactive “human library” workshop that encouraged skills exchange.

BKC community members also helped to incubate and facilitate efforts to develop and identify baselines, metrics, and measurements related to the social impact of artificial intelligence. With the DigiChina Project of the New America Foundation, BKC hosted a learning call with the Network of Centers to discuss the value of translational work across the NoC and hear from participants on how they’re approaching the measurement of technology’s impact. DigiChina’s work focuses on translation, analysis, and other efforts to deepen understanding of the development of digital technologies in China.

For more information about the Network of Internet & Society Centers, contact Urs Gasser ([ugasser@cyber.harvard.edu](mailto:ugasser@cyber.harvard.edu)) or visit [networkofcenters.net](http://networkofcenters.net)



BKC’s Sandra Cortesi discussing the Network of Centers at RightsCon.

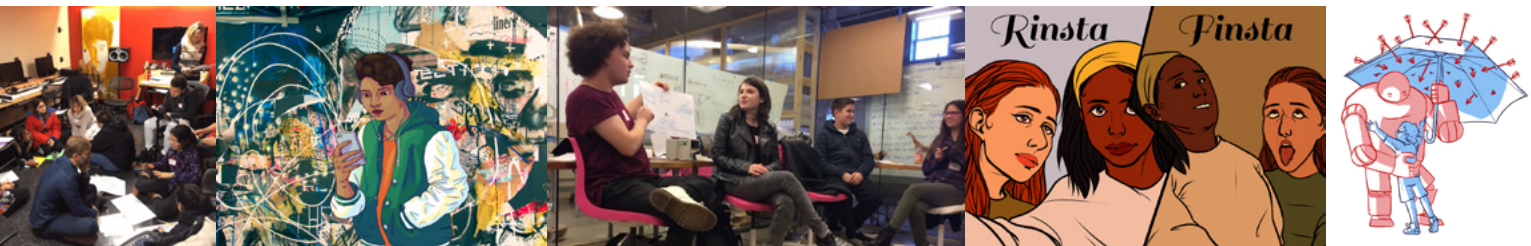
## Privacy Tools for Sharing Research Data

The Privacy Tools initiative is a broad, multi-disciplinary effort that aims to translate the theoretical promise of new technical measures for privacy and data utility into practical computational and legal tools that can be applied in a variety of contexts.

In 2018–2019, in collaboration with Harvard’s Center for Research on Computation and Society, the Institute for Quantitative Social Science, and the Data Privacy Lab, as well as collaborators at MIT Libraries, Georgetown University, and Boston University, the team advanced research toward the development of tools for combined legal-technical reasoning about privacy and utility, in support of an ongoing cooperative agreement with the Census Bureau. This research resulted in the publication of “[Differential Privacy: A Primer for a Non-technical Audience](#)” in the *Vanderbilt Journal of Entertainment & Technology Law*. It also led to the development of a new working paper that was workshopped at the 2019 Privacy Law Scholars Conference, “A Composition Theory for Privacy Law,” which explores how formal mathematical approaches to assessing cumulative risks from multiple data releases can inform a new legal framework for addressing such risks.

The team also coauthored a working paper, “Formalizing Privacy Laws for License Generation and Data Repository Decision Automation,” describing work to develop a prototype tool for automating the generation of data sharing agreements that reflect various regulatory and institutional requirements for privacy protection. Joint work with Michah Altman and Effy Vayena to conceptualize harms from algorithmic decision making yielded the publication of “[A Harm-Reduction Framework for Algorithmic Fairness](#)” in *IEEE Security & Privacy*, and an editorial that appeared in *The Hill*. Research results reached diverse law, policy, and technical audiences through invited talks at events hosted by the Simons Institute for the Theory of Computing at UC Berkeley, the National Academies of Sciences, the First Istanbul Privacy Symposium: Data Protection and Innovations, AEGIS EU-US Roundtable on the Interplay of Technology and Policy in Data Privacy, and Quebec Discussion Forum: Facing Artificial Intelligence in conjunction with the 32nd Conference on Neural Information Processing Systems (NeurIPS).

For more information about Privacy Tools, contact Alexandra Wood ([awood@cyber.law.harvard.edu](mailto:awood@cyber.law.harvard.edu)) or visit [cyber.harvard.edu/research/privacy\\_tools](https://cyber.harvard.edu/research/privacy_tools)



## Spotlight

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# Youth and Media

Youth and Media (YaM) encompasses an array of research, advocacy, and development initiatives around youth (ages 12-18) and digital technology. Working closely with other teams at the Berkman Klein Center, YaM draws on the knowledge of those with various backgrounds, including psychology, ethnography, sociology, education, media theory, and the law. Building upon this interdisciplinary approach, YaM involves youth in each step of the research process – from conceptualizing the research themes to the documentation and visualization of YaM’s work – to help ensure the research and educational initiatives resonate with young people’s experiences, needs, and interests. The team’s work builds upon an evidence-base that provides insights into the creative, educational, and revolutionary possibilities of youth activity in the digital space while addressing the concerns that come with a digitally connected life.

As a project, YaM’s work can be grouped into four modes – study, educate, build, and connect.

YaM examined youth's (ages 12-18) engagement on Instagram, which is currently the second most popular platform among youth in the US in "How Youth Are Reinventing Instagram and Why Having Multiple Accounts Is Trending."



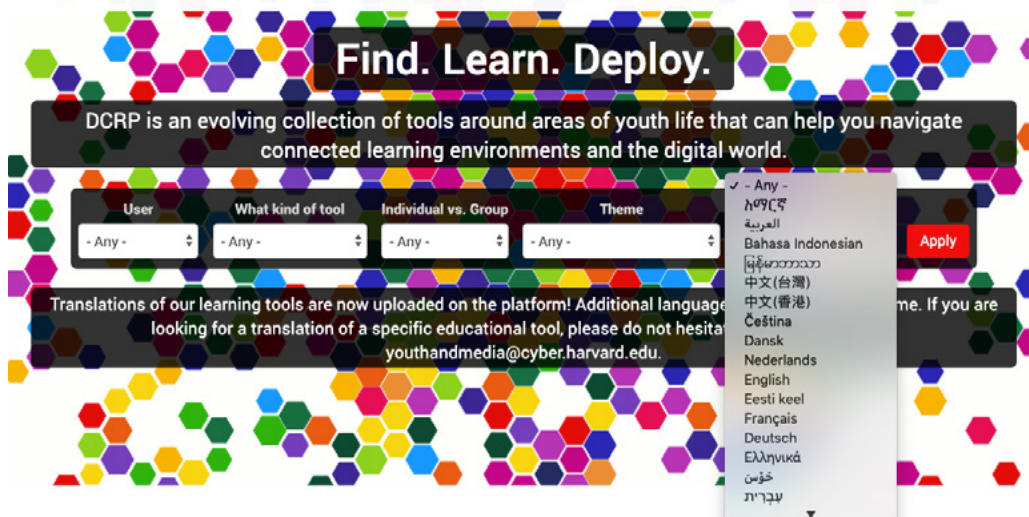
## Study

The best decision makers aspire to engage in evidence-based policy-making when asked to address difficult problems related to youth and digital technology. When it comes to the behavior and attitudes of young people, however, there is only limited empirical knowledge available that can serve as an evidence base for sound policy-making in areas such as well-being and health, privacy and reputation, or identity and self-expression. In order to help close this knowledge gap, the YaM team engaged in a number of research efforts over the last academic year—in collaboration with youth and experts from other disciplines and sectors—with the goal of impacting the current debate through events and within flagship publications and by providing guidance on emerging issues transforming economic, social, and cultural contexts.

For example, YaM released the paper "Youth and Artificial Intelligence: Where We Stand," which highlights some of the team's initial learnings and exploratory questions around the ways young people may interact with and be impacted by AI technologies. In a little over a month, the paper has been downloaded almost 3,000 times on DASH and has been featured at major events like ITU's AI for Good in Geneva and UNICEF's Towards Global Guidance on AI and Child Rights workshop. The piece is one of the YaM team's "spotlights"—short briefing documents that showcase the ways

youth engage with the digital landscape, and what opportunities and challenges emerge from it. Forthcoming spotlights will cover Youth and Cyberbullying, Digital Citizenship+, Digital Economy, and Student Privacy. The team also contributed to the OECD's new book *Artificial Intelligence in Society*, which offers an overview of the economic, technical, political, and social landscape of AI. The book has helped shape the adoption of the OECD's *AI Principles* and will serve as an analytical basis to develop the OECD's forthcoming AI Policy Observatory, a multistakeholder center for AI public policy.

Additionally, the YaM team has expanded its efforts in considering how parents and adults can engage positively with young people around digital issues, contributing to a forthcoming parenting guide, authored by John Palfrey and Urs Gasser, around topics spanning from screen time to online safety to civic engagement. John Palfrey also wrote the foreword for Leah Plunkett's book from the MIT Press Strong Ideas series, *Sharent hood: Why We Should Think Before We Talk about Our Kids Online*.



## Educate

A key contribution of YaM are educational materials made accessible via its [Digital Citizenship+ Resource Platform](#) (DCRP). Over the past year, the team has focused on making resources globally accessible, and working with different partners to implement them. YaM's educational tools were translated into over 35 languages, all available on DCRP, with more translated content to be added over time. These resources have been implemented in regions around the world, reaching youth in 18 countries, including Pakistan, Vietnam, India, Nigeria, Brazil, Argentina, and Mongolia. While translation alone has substantially increased the reach of YaM's resources, the team also worked with different partners to ensure that the framing of the resources, and examples given with them, are mindful of different cultural differences and contexts. One additional exploration has been the design of a textless illustrated book, meant to reach not only children but also families around the world, that aims to introduce readers to some of the social and ethical considerations surrounding AI-based technologies.

## Build

Last year, the YaM team significantly revamped the DCRP, home to over 100 open access educational tools, to make the platform more easily navigable to both new and returning users. Some new features include: 1) additional filtering options on the Home page, including "Language" and "Individual vs. Group," 2) an [External Resources](#) page, with sorting and filtering functions to help users browse over 90 resources that support our educational tools, 3) color coding on each educational tool to designate the thematic area(s) it addresses, and 4) the addition of translated resources. The team showcased the updated platform at RightsCon Tunis 2019 during the tech demo "[Promoting Youth's Rights to Privacy, Participation, and Education Through Co-Designed Educational Resources.](#)"

For more information about Youth and Media, contact Sandra Cortesi ([scortesi@cyber.harvard.edu](mailto:scortesi@cyber.harvard.edu)) or visit [youthandmedia.org](http://youthandmedia.org)

Members of the YaM team prepare to present their work at RightsCon.

(below) Cards from a YaM team-led networking exercise.

(opposite) The Youth and Media team's **Digital Citizen+ Resource Platform** houses over 100 open access educational tools.



### Connect

While young people around the globe are increasingly immersed in the digital world, significant knowledge asymmetries concerning the opportunities and challenges remain among different stakeholders. The YaM team is working with parents, educators, and decision-makers within governments, companies, and international organizations to build global capacity and engage in knowledge creation and sharing across boundaries, promoting the inclusion of youth voices and perspectives. In collaboration with the Conectados al Sur (CaS) network, for instance, YaM has been supporting the **HabLatam** project—an initial collaborative exploration that examines questions around skill development, content gaps, information quality, and digital social innovation.

YaM team members also presented their work at national and international conferences—including the Scratch Conference (Cambridge, MA, USA), Connected Learning Summit (Cambridge, MA, USA), International Telecommunication Union's AI for Good Global Summit (Geneva, Switzerland), Internet Governance Forum (Paris, France), Latin American Studies Association Conference (Boston, MA, USA), and RightsCon (Tunis, Tunisia)—and co-hosted a number of convenings with experts in the field (most recently, the workshop **"Towards Global Guidance on AI and Child Rights"** with UNICEF, in partnership with the IEEE Standards Association, the World Economic Forum, and other organizations part of **Generation AI**).



## 40 **Connections: Events, Conferences, and Working Groups**

Through discussions, lectures, conferences, workshops, and other gatherings, the Center convenes diverse groups around a wide range of topics that examine the Internet as a social and political space. While research and teaching are the Center's top priorities, these auxiliary connections facilitate the continuous expansion and renewal of the Center's core network. They stimulate interactions with other disciplines and institutions and provide diverse perspectives from academics, policymakers, activists, students, and technologists.



(clockwise from left)

Facebook Co-founder and CEO Mark Zuckerberg (left) with Jonathan Zittrain

BKC Fellow Sabelo Mhlambi (right) participates in a discussion at RightsCon 2019 in Tunis, Tunisia.

Sonia Kim, Carey Andersen, Sandra Cortesi, and Becca Tabasky greet visitors at the Berkman Klein table at RightsCon 2019 in Tunis, Tunisia



## Special Events

BKC's conferences and special events engage students, faculty, and fellows as well as government representatives, business leaders, and civil society members through their unique tenor and approach, and often lead to new collaborations.

The Center's **interactive workshops** often have an educational component to inform various stakeholders: the AG Tech Forum for attorneys general and deputies; the Challenges Forum for industry representatives; and CopyrightX Summit for online learners around the world, to name a few. Events such as these create spaces for open and interdisciplinary dialogue about tackling today's major challenges.

BKC co-founder Jonathan Zittrain hosted two special events this past year with leaders from Facebook. In December, Monika Bickert, the head of global policy management at Facebook, joined Zittrain in discussion to share her first-hand insights into the company in the previous year. In February, Zittrain hosted Facebook founder Mark Zuckerberg to discuss encryption, information fiduciaries, and targeted advertisements.



The Center also supported various panels and engagements, including "Cyberlaw and Human Rights: Intersections in the Global South" featuring Research Director Dr. Rob Faris, Dr. Hawley Johnson, Robert Muthuri, Juan Carlos Lara, Gayatri Khandhadai, and Jessica Dheere; and the "Drug Pricing Policies in the United States and Globally, from Development to Delivery" conference, featuring BKC co-director William Fisher, Ashveena Gajeelee, and Quentin Palfrey.

Other public events highlight the recent successes and expertise of BKC community members. For example, the Center supported and hosted numerous **book launches** last year, including Yochai Benkler, Rob Faris, and Hal Roberts's *Network Propaganda*, Mary Gray and Siddharth Suri's *Ghost Work*, and David Weinberger's *Everyday Chaos*. Through events pairing **film screenings** with expert panels, BKC community members lent their perspectives on various topics, including content moderation (*The Cleaners* was shown at Harvard Divinity School and discussed by Mary L. Gray, Greg Epstein, Lily Hu, Mo Safdari, and Salome Viljoen) and cyber harassment (Kendra Albert shared their thoughts on *NETIZENS* at Boston Women's Film Festival).

From misinformation and social media, to ethical AI and human rights, to blockchain, Berkman Klein community members also share their work through workshops and conversations at conferences, summits, and convenings around the world, small and large, ranging from South by Southwest, to the Internet Governance Forum and RightsCon, to AI for Good and Fairness Accountability Transparency (FAT)\* Asia.

## Book Launches

- › September 12, 2018: *Big Data, Health Law, and Bioethics* featuring I. Glenn Cohen, Holly Fernandez Lynch, Urs Gasser, and Effy Vayena. This event was co-hosted with the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics and the Health Ethics and Policy Lab, University of Zurich.
- › October 4, 2018: *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics* Panel featuring Yo-chai Benkler, Rob Faris, Hal Roberts, Claire Wardle, and Martha Minow.
- › May 14, 2019: *Everyday Chaos* featuring David Weinberger.
- › May 20, 2019: *Speech Police* featuring David Kaye with Ellery Biddle.
- › May 21, 2019: *Ghost Work* featuring Mary Gray with Gideon Lichfield.



## Talks, Panels and Discussions

- › September 13, 2018: *Data Driven Discrimination: What is it, and where do we go from here?* Featuring Wasserstein Fellow Brittny-Jade Saunders '08.
- › November 29, 2018: *Skewed or Rescued?: The Emerging Theory of Algorithmic Fairness*, featuring Cynthia Dwork. This event was co-hosted with the MIT Media Lab.
- › November 30, 2018: *Promoting Fairness, Equity, and Human Rights in Tech: Perspectives from Europe and the US on a Law and Policy Agenda* featuring Nani Jansen Reventlow, Vivek Krishnamurthy, and Jessica Fjeld.
- › December 3, 2018: *The State of Online Speech and Governance* featuring Monika Bickert and Jonathan Zittrain.
- › January 31, 2019: *Cyberlaw and Human Rights: Intersections in the Global South* featuring Rob Faris, Dr. Hawley Johnson, Robert Muthuri, Juan Carlos Lara, Gayatri Khandhadai, and Jessica Dheere.
- › February 15, 2019: *Re-Framing the Frame: Preparing Justice-Seekers Through Legal Education* featuring Kathleen Mahoney.
- › February 26, 2019: *Waking Up to the Internet Platform Disaster*, featuring Roger McNamee in conversation with Lawrence Lessig.





(clockwise from left)

metaLAB's Newman shares her work on AI, Big Ideas, & Shiny Objects at South by Southwest

Mary L. Gray, Greg Epstein, Lily Hu, Mo Safdari, and Salome Viljoen discussed *The Cleaners* at Harvard Divinity School.

Academy Award-winning Black Panther costume designer Ruth Carter spoke to a special class of CopyrightX in spring 2019.

Panelists discuss "Drug Pricing Policies in the United States and Globally" at a conference co-sponsored by Global Access in Action

### Other Events

- › September 17, 2018: Fall 2018 Open House featuring Berkman Klein Center & Friends
- › November 16-18, 2018: *The Laughing Room*. This event was hosted at and with collaboration with the Cambridge Public Library.
- › February 4, 2019: *Is AI Laughing at us? A Conversation* with Jessica Fjeld, Jon Orwant, and Nikhil Dharmaraj.
- › February 2019: *AG Tech Forum*.
- › March 1-4 2019: *Alterspace: Libraries, Digital Placemaking, and Emancipatory Design*, featuring metaLAB.
- › March 8, 2019: *Careers for Women in Technology*.
- › April 2019: *CopyrightX Summit*.

### Film Screenings and Panels

- › September 29, 2018: *Boston Women's Film Festival* screening of the film *NETIZENS*, featuring a panel discussion led by Kendra Albert.
- › April 12, 2019: *The Cleaners, A Film Screening and Panel Discussion* featuring Mary L. Gray, Greg Epstein, Lily Hu, Mo Safdari, and Salome Viljoen.



Find videos, podcasts, and writeups from many of our events at [cyber.harvard.edu/events](https://cyber.harvard.edu/events), and discover how to join us in person or live online

## Luncheon Series

For over a decade, the Center has hosted our **flagship seminar and discussion series**. These on-campus presentations attract a loyal following among students, faculty, and others from Harvard and beyond, are webcast live, and are made available as a podcast series. Many important projects and scholarly works have been vetted and influenced early in their trajectory at the Berkman Klein Luncheon Series.

In 2018-2019, the Center once again hosted a wide range of discussions during our luncheon series, with topics ranging from government's use of technology (presented by Alvin Salehi, Kathy Pham, and Chris Bavitz) to Black Cyberculture (presented by Andre Brock) to Constitutionalizing Speech Platforms (featuring Kate Klonick, Thomas Kadri, Chinmayi Arun, Kendra Albert, Jonathan Zittrain, and Elettra Bietti). Throughout the year, the Center also held internal luncheons for members of the BKC community to receive feedback on their new and ongoing research, tools, and ideas.

In addition, the Center co-hosted the "Digital Health@Harvard" Luncheon Series with the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics, as well as the "Global Access in Action" Luncheon series, which the Center co-hosted with the Harvard Global Health Institute.

### Full List of Luncheon Series

- › September 11, 2018: *Antisocial Media: How Facebook Disconnects Us and Undermines Democracy* featuring Siva Vaidhyanathan. This event was co-hosted with HKS Shorenstein Center.
- › September 18, 2018: *Platforms, Politics, and Power: Understanding and Shaping the Internet in 2018* featuring Jonathan Zittrain.
- › September 25, 2018: "Click Here to Kill Everybody," A BKC Book Talk featuring Bruce Schneier.
- › October 2, 2018: *Software for the Social Good* featuring the BKC Geek Team.
- › October 9, 2018: *Open Data, Grey Data, and Stewardship: Universities at the Privacy Frontier* featuring Christine Borgman. This event was co-sponsored with the Harvard Data Science Initiative.



BKC Executive Director Urs Gasser hosted a "Meet the Author Series" featuring conversations with authors about the big topics and takeaways from their books. Gasser spoke with Farah Pandith about *How We Can Defeat the Extremist Threat*, shown above, and Jason Farman (opposite, top), author of *Delayed Response: The Art of Waiting in an Instant World*.

(opposite, bottom) Siva Vaidhyanathan on *Antisocial Media: How Facebook Disconnects Us and Undermines Democracy*

- › October 23, 2018: *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* featuring Virginia Eubanks.
- › October 30, 2018: *Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions that Shape Social Media* featuring Tarleton Gillespie.
- › November 6, 2018: *The State of Government Technology: Assessing Government Development, Deployment, and Use of Tech Tools* featuring Alvin Salehi, Kathy Pham, and Chris Bavitz.
- › November 13, 2018: *Re-Engineering Humanity* featuring Brett Frischman.
- › December 4, 2018: *"My Constellation is Space": Towards a Theory of Black Cyberculture* featuring Dr. Andre L. Brock.
- › February 5, 2019: *A History of the Internet* featuring Scott Bradner.
- › February 19, 2019: *The Smart Enough City: Putting Technology In Its Place To Reclaim Our Urban Future* featuring Ben Green.
- › February 26, 2019: *Goodbye California?: The New Tech Working Movement* featuring Moira Weigel in conversation with Yarden Katz.
- › March 5, 2019: *Privacy's Blueprint, The Battle to Control the Design of New Technologies* featuring Woody Hartzog.



- › March 12, 2019: *Digital Democracy, Analogue Politics: How the Internet Era is Transforming Kenya* featuring Nanjala Nyabola and James Wahutu.
- › April 2, 2019: *Machine Learning to Find Injustice* featuring Ryan Copus.
- › April 9, 2019: *Constitutionalizing Speech Platforms* featuring Kate Klonick, Thomas Kadri, Chinmayi Arun, Kendra Albert, Jonathan Zittrain, and Elettra Bietti.
- › April 16, 2019: *Dirty Data, Bad Predictions: How Civil Rights Violations Impact Police Data, Predictive Policing Systems and Society* featuring Rashida Richardson.
- › April 23, 2019: *How to Work with Tech Companies on Human Rights: Insights from a Decade of Multi-Stakeholder Collaboration (and an Argument with Steve Jobs)* featuring David Sullivan in conversation with Chinmayi Arun.
- › April 29, 2019: *Having Our Cake and Eating It Too: How to Develop AI Competitively without Falling Victim to Collective Action Problems* featuring Amanda Askill and Lily Hu.
- › May 7, 2019: *IGNITE Talks at BKC* featuring Kathy Pham, Elettra Bietti, John Collins, Mariel Garcia Montes, Daniel Jones, Jasmine McNealy, Sabelo Mhlambi, Sarah Newman, and Salome Viljoen.
- › May 21, 2019: *Auditing for Bias in Resume Search Engines* featuring Christo Wilson.

## Working Groups

Community members engage in working groups to tackle and discuss major issues relating to Internet and society. A few of the working groups at the Berkman Klein Center have been meeting for years, and some began just a few months ago. The wide range of topics emphasizes the scope of work conducted across the Center, as well as the unique interests of members of the Berkman Klein community.

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### Berkwriters 18-19 Working Group

The Berkwriters 18-19 working group followed in the traces of its predecessor, Berkwriters 17-18, to provide a space for anyone who wanted a dedicated time and place—and the solidarity of other writers tapping and sighing and daydreaming nearby—to coax their words onto the page. In the words of one regular member of the group:

*“Our three-hour writing session was, invariably, my most productive time. The little devil that tempts me to stray into extraneous research, and then onto entirely extracurricular web-surfing, was banished during that time, as well as his email-checking, dish-washing, cat-brushing, bill-paying relations. The physical co-presence of my fellow writers, each silently typing away, provided invaluable motivation.”*

Each week, participants would write their goals for the three hours on the blackboard. Book chapters were drafted. Journal articles completed. Blogposts composed. Sometimes, donuts were served.

### Chat Apps Working Group

The Chat Apps working group, led by Yvonne MacPherson, hosted weekly sessions by fellows and guests presenting research on the impact of chat apps on socioeconomic and political behavior. Topics focused on the Global South and included the use of chat apps for civic activism, the role of culture on chat apps activity, and how to conduct research ethically in public and private groups. It will soon publish an article that distills key discussion points.



(from left to right ) Community members Sonia Kim and Jonathan Jackson.

### Emerging Digital Issues in the Global South Working Group

The Emerging Digital Issues in the Global South (EDIGS) Working Group began as a fruitful conversation on issues such as the meaning of data colonialism and technological sovereignty, the ethical and human rights consequences of deploying artificial intelligence systems in these countries, and the types of public policies the Global South might need to pursue sustainable development and social justice goals.

### Ethical Tech Working Group

The Ethical Tech Working group continued to convene a weekly interdisciplinary group of academics, researchers, and industry across social science, law, computer science, data science, philosophy, political science, public policy, race and gender studies, and more. Over the year, it hosted guests who had questions about their technology practices, and brainstormed paths forward. It is also working on an essay collection.

### Misinformation Working Group

The Misinformation Working Group tackled the issue of misinformation from a global perspective. While the members of the Working Group had focused on establishing a model of misinformation that put the emphasis on “the audience” in the previous year, in 2018-19, the Working Group adapted that model and grappled with misinformation’s global scale. Coming from a comparative perspective, members of the Working Group discussed the role of institutional actors in legitimizing misinformation, platforms, and apps that facilitate the spread and diffusion of misinformation, as well as the differences between countries and misinformation’s potential impact. To do so, the Misinformation Working Group had several guest speakers that presented, for example, cutting edge academic research on misinformation on Twitter, research methods on understanding misinformation and their spread on Facebook, as well as conducting cross-national surveys on health misinformation. In order to advance their understanding of misinformation, the members of the Working Group read and discussed current academic articles and research projects but also discussed current issues surrounding election interference as well as potential solutions that aim to tackle this thorny issue.



The Race and Media working group hosted a talk with Dr. André Brock in December 2018.

(opposite) Members of the BKC community volunteered to archive unsorted documents belonging to Alice K. Hartley to try to understand the scope of her contributions to computer science.

### Race and Media Working Group

The Race and Media Working Group, founded and coordinated by Jenny Korn, acts as a centralizing force for BKC's community to focus on media and technology topics in relation to race, racism, and racial justice. In its second year, the Race and Media Working Group was able to leverage the cultural foundations built during its inaugural year to host timely conversations on contemporary topics to interrogate racial fairness, ethics, and justice.

Throughout the year, the Race and Media Working Group met regularly to discuss key readings by scholars of color on artificial intelligence, intersectionality theories, media encoding, gender biases, Black youth, digital equity, hashtag counterpublics, intellectual labor, online enclaves, network analyses, and legal whiteness. This past year, the Race and Media Working Group highlighted women and individuals of color sharing research and experiences on Black cyberculture, tweet trolling, white supremacy, combating anti-blackness, digital rent parties, and police retaliation against those that film them.

Beyond helping to improve the number of presenters of color at BKC, the Race and Media Working Group seeks to increase the number of applicants from minoritized pop-

ulations to the fellow program. Toward that end, many members of the Race and Media Working Group volunteered their time and energy to reach out, encourage, and assist people from underrepresented populations interested in submitting fellowship applications. The Race and Media Working Group aims to make a positive difference and lasting impact on diversity in relation to topics, speakers, applicants, and knowledge for this cohort and future generations of community at the Berkman Klein Center for Internet and Society.

### Re-Decentralizing the Web Working Group

The Re-Decentralizing the Web Working Group was designed as a space to learn and discuss the meaning, relevance, and implications of a growing movement that promotes the re-decentralization of the web. To that end, we put together a list of readings and brought together a set of stellar external speakers, including Sir Tim Berners-Lee, Jonathan Zittrain, Nick Mathewson, Primavera De Filippi, Patrick Murck, Kathleen Breiman, and David Weinberger, to whom we are immensely grateful.





### Tech Through Spec

The Tech Through Spec working group met biweekly to use speculative writing techniques to explore current and future technologies. Originally run by both Amy Johnson and Andres Lombana-Bermudez, in January Lombana-Bermudez shifted to remote participation after taking up a faculty position at the Universidad Javeriana. In this second year of the working group, participants continued to work both individually and collaboratively from speculative prompts created specifically for the group. This past year, prompts were not only textual but also scent-based. The working group also focused much of its attention on a larger project: *A Field Guide to Real and Imagined Technology*. This field guide project has in turn led to a generative exploration of the ethics of imagining technology, thanks in part to collaboration with the Ethical Tech working group.

### Working Theories Reading Group

During 2018–2019, BKC affiliate Elettra Bietti and Fellow Padmashree Gehl Sampath jointly coordinated the Working Theories Reading Group. This past year, the group focused on four main themes: the data economy, platform speech moderation, colonialism, and critical race and racial justice. As the working group’s name indicates, the group’s aim was to find theories that work, and to work existing theoretical discussions into the quest for practical outcomes for key issues in data protection, AI, and digital societies. While the group focused on theoretical debates, dimensions, and issues, it was equally interested in inquiring on how these theoretical insights could offer the right perspective to problem-solving at various levels—local, national, and global. Examples include discussions within the group on data colonialism, venture capital, and grassroots innovation in the Global South. The Working Theories reading group had an interesting discussion about whether scaling technological breakthroughs was a legitimate aim to pursue. Other discussions included how to bridge the gap between critical race theories and other more mainstream theories, whether the concept of “data colonialism” could do justice to data practices in countries that had actually been colonized, and the drawbacks of mechanism design, among others. The reading group also had a significant impact on participants’ research agendas, leading some to refine their understanding of the issues at stake and to incorporate such understanding in their books or papers, and directing others toward new research avenues. Participants also felt that reading and understanding theoretical works was essential to grasping the complexities underlying digital institutions and innovation.

# Books and Publications

## Berkman Klein Publications

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**Youth and Artificial Intelligence: Where We Stand**  
May 31, 2019

**Internet Censorship and the Intraregional Geopolitical Conflicts in the Middle East and North Africa**  
January 16, 2019

**Assessing the Assessments: Lessons from Early State Experiences in the Procurement and Implementation of Risk Assessment Tools**  
December 10, 2018

**Differential Privacy: A Primer for a Non-Technical Audience**  
November 1, 2018

**Is Privacy Privacy?**  
October 18, 2018

**Artificial Intelligence and Human Rights: Opportunities and Risks**  
September 25, 2018

**Censorship and Collateral Damage: Analyzing the Telegram Ban in Iran**  
September 5, 2018

**Bridging the Gap between Computer Science and Legal Approaches to Privacy**  
August 21, 2018

Discover more of our research.  
Visit: [cyber.harvard.edu/publications](https://cyber.harvard.edu/publications)

## Featured Books



### Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics

Oxford University Press  
Hal Roberts, Robert Faris, and Yochai Benkler

### Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass

Houghton Mifflin Harcourt  
Mary L. Gray, Siddharth Suri

### Everyday Chaos: Technology, Complexity, and How We're Thriving in a New World of Possibility

Harvard Business Review Press  
David Weinberger

### Thick: And Other Essays

The New Press  
Tressie McMillan Cottom

### Click Here to Kill Everybody: Security and Survival in a Hyper-connected World

W. W. Norton & Company  
Bruce Schneier

### The Smart Enough City: Putting Technology in Its Place to Reclaim Our Urban Future

MIT Press  
Ben Green

### Big Data, Health Law, and Bioethics

Cambridge University Press  
I. Glenn Cohen, Holly Fernandez Lynch, Effy Vayena, and Urs Gasser

### Woke Gaming

University of Washington Press  
Kishonna L. Gray and David J. Leonard, editors

## 52 **Our Community**

Our community is at the heart of what we do. Each fall, a new class of fellows joins us in Cambridge, Massachusetts, to work alongside Berkman Klein faculty, students, and staff as a vibrant community of research and practice. Honoring the networked ethos at the heart of the Center, faculty associates and affiliates from institutions the world over also actively participate. These relationships, as well as the countless fruitful engagements with Center alumni, partners, interns, and other colleagues, are fundamental to our work and identity, and serve to increase the capacity of the field and generate opportunities for lasting impact.





Fellows, affiliates, students, staff, and other members of the 2018-2019 Berkman Klein community



# 2018-2019 Community

## Joining as Fellows in 2018-2019



**Titi Akinsanmi**

Researched Privacy, AI, and the Digital Economy in Africa and worked on demystifying these issues for the end user on [demistef.ai](http://demistef.ai).



**Padmashree Gehl Sampath**

Further developed her project “Development in the Data Economy,” published three working papers on related topics, submitted three articles to peer-reviewed journals, and completed two book chapters.



**Velislava Hillman**

Researched how increasing digitized school environments pose a risk of diminishing personal freedoms and developed a decentralized platform to empower students to have greater control of their data.



**Ying-Hung Chou**

Researched how to obtain admissible computer evidence and comparative evidence codes in the digital age.



**Nick-Brie Guarriello**

Wrote two articles on the evolving relationship between content creators and fans online, and the shift from sharing economies to market-like economies among fan communities.



**Lily Hu**

Researched AI and their politics, producing three publications about fairness in machine learning theory, the politics and philosophy of applied economic theory, and a new pedagogical model for teaching ethics side-by-side with technical material at Harvard.



**Jessica Dheere**

Expanded the Arab Digital Rights Dataset, a database of Arab cyberlaw, into the global [CYRILLA Collaborative](http://CYRILLA.org), which tracks the impacts of national laws on human rights online.



**Rachel Han**

Presented her research on how local governments are approaching data governance and data sharing initiatives at numerous academic, civic tech, and IoT and Smart City industry conferences.



**Jonathan Jackson**

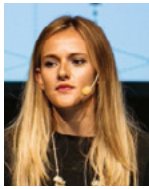
A Nieman-Berkman Klein fellow, researched ownership across the digital media ecosystem, with a specific focus on the African diaspora in the US and in the UK.



**Armando Guio**

Collaborated with the Ethics and Governance team and designed a project to provide academic insights to the Colombian government on their digital transformation national plan and AI Strategy.

For more accomplishments from our 2018-2019 fellows, faculty associates, and affiliates, visit [cyber.harvard.edu/getinvolved/fellowships](http://cyber.harvard.edu/getinvolved/fellowships)



**Dragana Kaurin**

Published a report, "Data Protection & Digital Agency for Refugees," which included interviews with asylum seekers around the EU about data collection, forced collection of biometric data, and informed consent and digital agency.



**Eerik-Niiles Kross**

Worked to develop a new playbook to navigate and address the intensifying hybrid campaigns to disrupt and undermine democratic institutions and practices throughout the West.



**Jim Lucchese**

Used a market-centric approach to examine how new technologies are changing artistic collaboration.



**Momin Malik**

The Center's inaugural Data Science Post-doctoral Fellow, co-organized the first Workshop on Critical Data Science at the International Conference on Web and Social Media, and aided the Media Cloud project in documenting and validating its infrastructure and methodology.



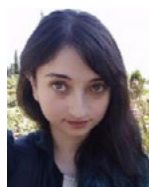
**Jasmine McNealy**

Shared her research on community-based organizations and individuals whose focus is on teaching anti-surveillance technology literacy and engaging in policy advocacy.



**Sabelo Mhlambi**

Examined the ethical and human rights impact of algorithmic technology in disenfranchised communities within the United States and the Global South. His work, focusing on Sub-Saharan Africa, has proposed an ethical and human rights framework based on the local philosophy of Ubuntu that will be released in a forthcoming paper and accompanied by a podcast series.



**Yomna Nasser**

Researched cell network security and published the white paper "Gotta Catch 'Em All: Understanding How IMSI-Catchers Exploit Cell Networks (Probably)."



**Paola Ricaurte**

Analyzed technological development from a feminist and decolonial perspective and co-organized a hackfeminist meeting in Chiapas, Mexico.



**Hyunjin Seo**

Published three peer-reviewed journal articles on digital literacy, trust propagation, and visual public relations, and received a \$1.4 million grant award from the National Science Foundation to support technology education for recently incarcerated women reentering the job force.



**Mindy Seu**

Created a three-decade archive of cyberfeminist activity and researched novel forms of peer-to-peer publishing. She will be an Assistant Professor at Rutgers University in fall 2019.



**Amy X. Zhang**

Researched online misinformation and harassment, content moderation, and platform governance, and defended her thesis on "Systems for Collective Human Curation of Online Discussion" for her PhD at MIT in Computer Science.

# 2018-2019 Community

## Directors

Our Board of Directors shapes the Center's overarching vision and direction. The Board determines financial, research, academic, personnel, governance, and other key organizational decisions, and consists of faculty from Harvard Law School, Harvard Business School, the Graduate School of Design, and the School of Engineering and Applied Sciences, among others.

Christopher "Chris" Bavitz  
Harvard Law School

Charles "Charlie" Nesson  
Harvard Law School

Margo I. Seltzer  
Harvard SEAS

Yochai Benkler  
Harvard Law School

Felix Oberholzer-Gee  
Harvard Business School

Stuart Shieber  
Harvard SEAS

John Deighton  
Harvard Business School

Ruth Okediji  
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Rebecca Tushnet  
Harvard Law School

William "Terry" Fisher  
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Jeffrey Schnapp  
Harvard Faculty of Arts and  
Sciences  
Harvard Graduate School of  
Design

Jonathan Zittrain  
Harvard Law School  
Harvard SEAS  
Harvard John F. Kennedy School  
of Government

## Returning Fellows

Kendra Albert, Chinmayi Arun, Sandra Cortesi, Jack Cushman, John DeLong, Ashveena Gajeelee, Kat Geddes, Mary Gray, Jenn Halen, Nathan Kaiser, Jenny Korn, Mason Kortz, Rosemary Leith, Andres Lombana, Sarah Newman, John Palfrey, Kathy Pham, Hal Roberts, Bruce Schneier, Salome Viljoen, James Wahutu, Jordi Weinstock, Alexandra Wood

## Faculty Associates

Ifeoma Ajunwa, Virgilio Almeida, Solon Barocas, Fran Berman, Fernando Bermejo, Susan Benesch, Lionel Brossi, Herbert Burkert, Sasha Costanza-Chock, Tressie McMillan Cottom, Nick Couldry, David Cox, Primavera De Filippi, Juan Carlos de Martin, Finale Doshi-Velez, Jens Drolshammer, Niva Elkin-Koren, Christian Fieseler, Casey Fiesler, Mayo Fuster Morell, Laura Forlano, Phillipa Gill, Christoph Graber, Kishonna Gray, Eileen Le Han, Samer Hassan, Woodrow Hartzog, Jerome Hergueux, Benjamin Mako Hill, Joichi Ito, Sarah J. Jackson, Malavika Jayaram, Beth Kolko, Vasilis Kostakis, Harry Lewis, David Malan, Catharina Maracke, James Mickens, Desmond Patton, Leah Plunkett, Justin Reich, Carla Reyes, Nagla Rizk, Cynthia Rudin, Margo Seltzer, Brittany Seymour, Aaron Shaw, Clay Shirky, Alexander Trechsel, Zeynep Tufekci, Effy Vayena, Dorothy Zinberg

## Fellows Advisory Board

Judith Donath, Eszter Hargittai, Colin Maclay, Wendy Seltzer, Jake Shapiro, David Weinberger, Ethan Zuckerman



Members of the 2018-2019 Berkman Klein community meet at Harvard in September 2018 for opening festivities.



## Affiliates

Rediet Abebe, Doaa Abu-Elyounes, David Arney, Genevieve Barrons, Celina Beatriz, Ellery Biddle, Elettra Bietti, Doreen Bogdan, Nikki Bourassa, Catherine Bracy, Scott Bradner, Amy Brand, Allister Chang, Pritha Chatterjee, Bao Kham Chau, Joanne Cheung, Aloni Cohen, John Collins, Yasodara Cordova, Kate Coyer, Kate Darling, Michael Della Bitta, Renee DiResta, Ron Dolin, Joan Donovan, Andy Ellis, Jeannette Estruth, Mailyn Fidler, Camille François, Nathan Freitas, Juan Ortiz Freuler, Devin Gaffney, Mariel Garcia Montes, Ashley Gorham, Ben Green, Gretchen Greene, Andrew Gruen, Nikolas Guggenberger, Natalie Gyenes, Zia Haider Rahman, Kateryna Maltseva, Elizabeth Hansen, Brittan Heller, Kira Hessekiel, Felipe Heusser, Nate Hill, Tim Hwang, Dean Jansen, Nani Jansen Reventlow, Aida Joaquin Acosta, Amy Johnson, Rey Junco, Jonas Kaiser, Rachel Kalmar, Simin Kargar, John Kelly, Danil Kerimi, Emad Khazraee, Levin Kim, SJ Klein, Greg Leppert, Yvonne MacPherson, An (Xiao) Mina, Mary Minow, Patrick Murck, Grace Mutung'u, Helmi Noman, Matt Olsen, Sunoo Park, Matthew Pearl, Jonnie Penn, Keith Porcaro, Lorryne Porciuncula, Tenzin Priyadarshi, Jie Qi, Gali Racabi, Alan Rozenshtein, Alvand Salehi, Elaine Sedenberg, Andy Sellars, Boaz Sender, Suchana Seth, Beau Sievers, Ram Shankar Siva Kumar, Ben Sobel, Luke Stark, Fabro Steibel, Gosia Stergios, John Stubbs, Jonathan Sun, Aden van Noppen, Joana Varon, Gili Vidan, Paola Villarreal, Soroush Vosoughi, Kevin Wallen, Matthew Wansley, Waide Warner, Sara Marie Watson, Sarah West, Adam Ziegler

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Carey Andersen, Amar Ashar, Nicole West Bassoff, Matthew Battles, Victoria Borneman, John Bowers, Griffin Boyce, Ryan Budish, Justin Clark, Sebastian Diaz, Alexandra Dolan-Mescal, Robert Faris, L. Kelly Fitzpatrick, Jessica Fjeld, Alexandra Hasse, Hannah Hilligoss, Adam Holland, Daniel Jones, Sonia Kim, Mason Kortz, Annabel Kupke, Reuben Langevin, Momin Malik, Jonathan Murley, Adam Nagy, David O'Brien, Megan O'Neil, Ellen Popko, Hilary Ross, Carolyn Schmitt, Jenna Sherman, David Ssewankambo, Rebecca Tabasky, Casey Tilton, Andromeda Yelton, Jessica Yurkofsky

# 2019–2020 Community

## Joining as Fellows in 2019–2020

**John Basl** is an Associate Professor of Philosophy at Northeastern University. He will work to develop a committee-based oversight framework for addressing ethical challenges raised by artificial intelligence. Basl will be an AI Initiative Fellow-in-Residence with the Berkman Klein Center and the Edmond J. Saffra Center for Ethics.

**Beatriz Botero Arcila** is an SJD candidate at Harvard Law School. At the Berkman Klein Center she will continue her doctoral research, which studies when and how local governments access and use data collected by third parties that provide “city-services,” such as Uber, Airbnb, or Google Maps.

**Chiao-Fang Chen** is a prosecutor in the Taiwan Taichung Prosecutors Office and a Certified Anti-Money-Laundering Specialist. She will research the incorporation of new cyber tools and techniques into the investigation of money laundering in fraud crime.

**Leonard Cortana** is a PhD candidate in the Cinema Studies Department at New York University. His research examines the trans-media representation and activism of mixed-race youth, particularly in Brazil, France and its overseas territories, and the United States. As a fellow, he will investigate the development of digital ancestry and genealogy platforms, and conduct fieldwork with mixed-race youth who are using online tools to explore their roots and support collaborative activism.

**Brenda Dvoskin** is a doctoral student at Harvard Law School, and her research focuses on the moderation of hate speech on social media platforms.

**Hannane Ferdjani**, a lead presenter and producer for Africanews in the Republic of the Congo, will study how to develop new solutions journalism methods when covering nations undergoing digital transformations, with a focus on ensuring rigorous and effective reporting. Ferdjani will be a Nieman-Berkman Klein Fellow in Journalism Innovation.

**Ariel Herbert-Voss** is a hacker-turned-academic and computer science PhD student at Harvard University, where she specializes in adversarial machine learning, computer security, and mathematical optimization. As a fellow, she will research vulnerabilities and developing threat models for AI-based systems to help security researchers more effectively red-team these systems in production.

**Karen Huang** is a PhD candidate in Organizational Behavior with a secondary field in Science, Technology, and Society (STS) at Harvard University. She will examine democratic processes in defining algorithmic fairness, variation among technical experts and policymakers in conceptions of artificial intelligence, and the development of micro-targeting practices in predicting and influencing human behavior.

**Timothy Neff** earned his PhD from New York University’s Department of Media, Culture, and Communication. He will research news and social media discourse about climate change, focusing on issues of access, equity, and engagement in the transnational public spheres of climate governance processes.

**Mutale Nkonde**, a US-based policy analyst, will conduct an ethnographic study on how congressional staffers learn about the impact AI technologies have on vulnerable communities.





**Julie Owono** is a lawyer and the executive director of Internet Sans Frontières, a Paris-based digital rights advocacy organization. Her research at the Berkman Klein Center will focus on reflecting and developing a solution that allows content platforms to moderate hate and violence on their spaces in a manner that is respectful of freedom of expression, especially in environments with strong political and ethnic antagonisms.

**Julia Reda** has focused her political work on copyright reform as a Member of the European Parliament 2014–2019. As a Berkman Klein fellow and a graduate student at the MIT Media Lab, Reda will advance research on how to modernize the academic publishing system to enhance equitable access to knowledge, and to empower academic authors to make use of their rights in the service of open science.

**Elizabeth M. Renieris** is the founder of hackylawyER, a consultancy focused on law and policy engineering, and an expert on cross-border data protection and privacy laws, digital identity, and emerging technologies like blockchain and AI. She will focus her research on designing new and improved legal frameworks for the digital age.

**Afsaneh Rigot**, a legal and human rights researcher working with ARTICLE 19, will focus on the prosecution process and use of digital evidence gathered through tools such as social media and dating apps against queer communities (focusing specifically on the MENA region), using this to further conversations about the roles and responsibilities of companies towards their users and the need for better user-centered technology.

**Naomi Scheinerman** is a PhD candidate in political theory at Yale University. Her research explores the uses of randomly selected democratic bodies in addressing matters of algorithmic governance and AI regulation. Scheinerman will be an AI Initiative Fellow-in-Residence with the Berkman Klein Center and the Edmond J. Safra Center for Ethics.

**Todd Wallack**, an investigative and data reporter for the Boston Globe Spotlight Team, plans to study how newsrooms can better act as watchdogs as companies and government agencies increasingly employ obscure algorithms and artificial intelligence to make decisions. Wallack will be a Nieman-Berkman Klein Fellow in Journalism Innovation.

**Apryl Williams** is an Assistant Professor in the Department of Sociology and Anthropology at Susquehanna University. Her work examines racial bias in online dating, questions user agency when using match-making algorithms, and explores the experiences of people of color as they navigate online dating platforms.

**Christo Wilson**, an Associate Professor at Northeastern University, will audit the dependencies between major search engines and social media platforms to provide a deeper understanding of the operations of the platforms and how their design decisions impact the public.

**Baobao Zhang**, a PhD candidate in political science at Yale University and a research affiliate with the Center for the Governance of AI at the University of Oxford, will study global public opinion toward AI and machine learning researchers' views on AI governance. Zhang is an Associate Professor of Philosophy at Northeastern University. He will work to develop a committee-based oversight framework for addressing ethical challenges raised by artificial intelligence. Zhang will be an AI Initiative Fellow-in-Residence with the Berkman Klein Center and the Edmond J. Safra Center for Ethics.

# 2019-2020 Community

## Joining as faculty associates

Danielle Allen, Danielle Citron, Jessie Daniels, Jason Farman, Howell Jackson, Jennifer Jenkins, Brandeis Marshall, Kathryn Modecki, Russell Newman, Dietmar Offenhuber, Najarian Peters, Plamena Popova, Maria Rodriguez, Pier Luigi Sacco, Abbey Stemler

## Joining as affiliates

Nele Achten, Kike Aluko, Naniette Coleman, Emma Day, Karthik Dinakar, Evelyn Douek, Fred Fedynshyn, Noa Gafni, Aaron Gluck-Thaler, Siobhan Grayson, Tyrene Jones, Uli Köppen, Maciej Kuziemski, Taylor Lorenz, Asaf Lubin, Ryan Merkley, Matthew Mulder, Katherine Pratt, Thibault Schrepel, Elif Sert, Joshua Simons, Alisa Valentin

## Returning as fellows

Sandra Cortesi, Ashveena Gajeelee, Kat Geddes, Padmashree Gehl Sampath, Rosemary Leith, Momin Malik, Sabelo Mhlambi, Sarah Newman, Hal Roberts, Bruce Schneier, and Alexandra Wood

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Members of the 2019-2020 Berkman Klein community

# Acknowledgments

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The Berkman Center for Internet and Society was founded in 1997 with a generous gift from Jack N. and Lillian R. Berkman. The Berkman family continues its steadfast support with annual contributions toward the Center's operations. In July 2016, the Center became the Berkman Klein Center for Internet and Society, in recognition of a significant gift from Michael R. Klein that not only provides vital core support but also allows the Center to launch new initiatives. In addition to these major gifts, the Berkman Klein Center has received other financial support over the years, mostly grants from foundations, international organizations, and government entities. For a complete list, see [cyber.harvard.edu/about/support](http://cyber.harvard.edu/about/support)

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Editor: Carolyn Schmitt

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Layout & design by: Chelsea Qiu & Daniel Dennis Jones



The Berkman Klein Center for Internet and Society at Harvard University is dedicated to exploring, understanding, and shaping the way we use technology.

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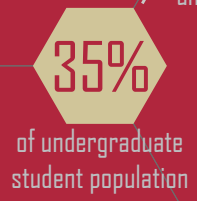
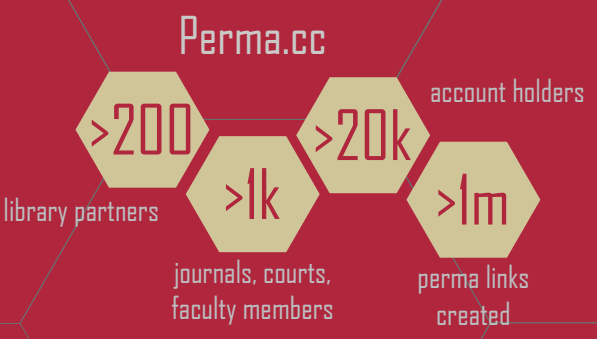
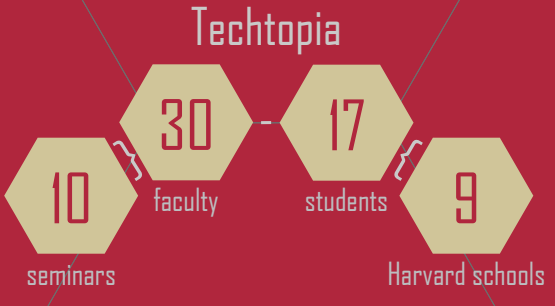
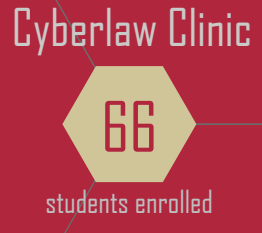
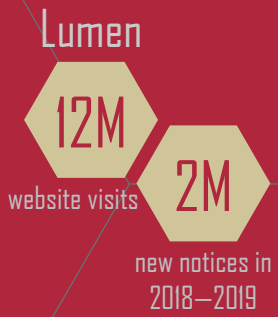
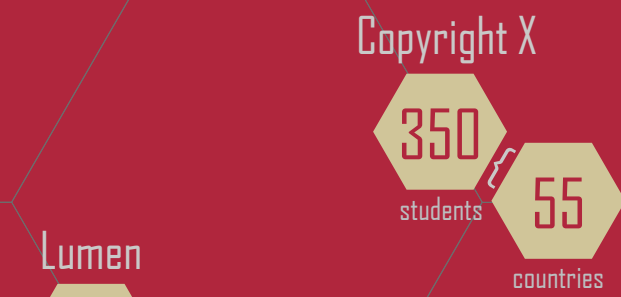
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# By the Numbers





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