Designing Justice

Data Science for Human Rights Advocacy

A Blueprint for the Global Rights Innovation Lab Clinic

July 2025

UC Berkeley Law
Global Rights
Innovation Lab Clinic

Authors

Laurel Fletcher, ORCID
Valentina Rozo Angel, ORCID
Ariel Sim, ORCID

Contributors

Dana B. Dabbousi
Anthony Ghaly
Steven P. Hensley
Gabriel Kong
Sida Lai
Laurel E. McGrane
Grace G. Oyenubi
Mirella Piestun

Publication Details

University of California, Berkeley, School of Law
Global Rights Innovation Lab (GRIL) Clinic
July 7, 2025
DOI: https://doi.org/10.15779/J2V91M
ISBN: 978-1-968435-01-1

Acknowledgements

We thank our interviewees and student study group participants for sharing their time and insights so generously and Stephanie Andrews, Anthony Ghaly, Alejandro Jiménez Ospina, Alexa Koenig, and Hannah Wittman for their review of the document. We also thank Dean Erwin Chemerinksy for his commitment to clinical education and support of the GRIL Clinic.

The authors are grateful to the individual donors to the Global Rights Innovation Lab Clinic without whom this work would not be possible.

Table of Contents

Executive Summary **1**
Introduction **2**
Conceptual Foundations **6**
The Data Science Pipeline 7
Applied Design & Innovation Management Tools 8
Methodology **13**
Overview 14
Stakeholder Interviews 15
Student Focus Groups 16
Analysis 17
Limitations 17
Continued Research 18
Research Findings: What did we learn from our research participants? **20**
Part 1. Exploring the Field: Findings from Stakeholder Interviews 21
Part 2. Exploring GRIL's Contribution 26
Concept Development: The Emerging GRIL Model **33**
Part 1. Who We Are 34
GRIL Overview 34
Our Stakeholders and Students 35
Client and Collaborator Archetypes 36
Student Archetypes 41
Part 2. What We Do **44**
Service #1: Case-building 46
Service #2: Data Analysis & Modeling 48
Service #3: Digital Storytelling 50
Conclusion **53**
Notes **55**
Appendix A. Research Questions: Stakeholder Interviews **58**
Appendix B. Research Questions: Student Focus Groups **59**
Appendix C. Quantitative Analysis Overview: Stakeholder Interviews **60**

Executive Summary

The **Global Rights Innovation Lab Clinic** (“GRIL” or “the GRIL Clinic”) at UC Berkeley Law was co-created in response to a critical gap in the global human rights field: the underutilization of data science and digital technologies in human rights advocacy. Traditional approaches to advocacy are insufficient to confront complex, contemporary threats such as authoritarianism, the climate crisis, corporate overreach, and digital surveillance. Berkeley Law is addressing this challenge by creating a multidisciplinary law clinic that fuses legal education with advanced data and technology training in a live client setting.

Between January and April 2025, the GRIL Clinic—supervised by Professor Laurel Fletcher, Clinical Supervisor Valentina Rozo Angel, and Design Strategist Ariel Sim—conducted a strategic discovery process involving twenty-two stakeholder interviews and three student focus groups. These engagements identified common challenges associated with integrating emerging technologies and data methods into human rights work, along with opportunities to advance the application of data science and new technologies for advocacy efforts. The research revealed strong interest from practitioners and students in the clinic’s mission, alongside significant gaps in technical and data literacy, capacity, and infrastructure across the sector.

GRIL proposes three core service areas: (1) case-building through data-driven legal analysis; (2) data analysis and modeling to uncover patterns and generate actionable insights; and (3) digital storytelling to create compelling advocacy narratives. Each service engages multidisciplinary student teams to collaborate with client organizations, offering hands-on experience in advocacy methods. The clinic’s work is grounded in ethical principles, prioritizing community-centered design and rigorous attention to human rights protections.

The GRIL Clinic leverages UC Berkeley’s institutional strengths to train a new generation of human rights and public interest professionals adept at navigating the intersection of law, data, and technology. Through this pilot phase, GRIL will test and refine its operational model, make contributions to field innovation, and serve as a convening platform to foster ethical, impactful, and interdisciplinary human rights work in the digital age.

INTRODUCTION

Introduction

Technology is pervasive in virtually every aspect of our lives. However, the global human rights movement has yet to harness the full potential of new technologies and data methods to improve advocacy outcomes. Traditional human rights advocacy techniques—pressuring violators to comply with human rights standards—are insufficient to confront rising authoritarianism, the climate emergency, economic inequality, unchecked power of corporations and big tech, among other challenges.[1] There is an urgent need for human rights organizations to leverage data and digital technologies to advance justice, bringing the emergent specialization of public interest technology into global human rights practice.[2] The **Global Rights Innovation Lab Clinic** ("GRIL" or "the GRIL Clinic") seeks to fill this gap, training a new cohort of multidisciplinary students who can practice professionally at the intersection of human rights advocacy and technology.

From January—April 2025, Professor Laurel Fletcher, Clinical Supervisor Valentina Rozo Angel, and Design Strategist Ariel Sim led a group of seven clinical law students through a strategic planning and discovery process to inform the design of GRIL. This document reports on the design process, study findings, and operational model that will guide the GRIL Clinic at UC Berkeley School of Law.

The Design Question

How might we design a center of excellence at UC Berkeley Law that prepares law students and graduate students trained in data science to serve human rights work in innovative ways?

Where do we want to innovate?

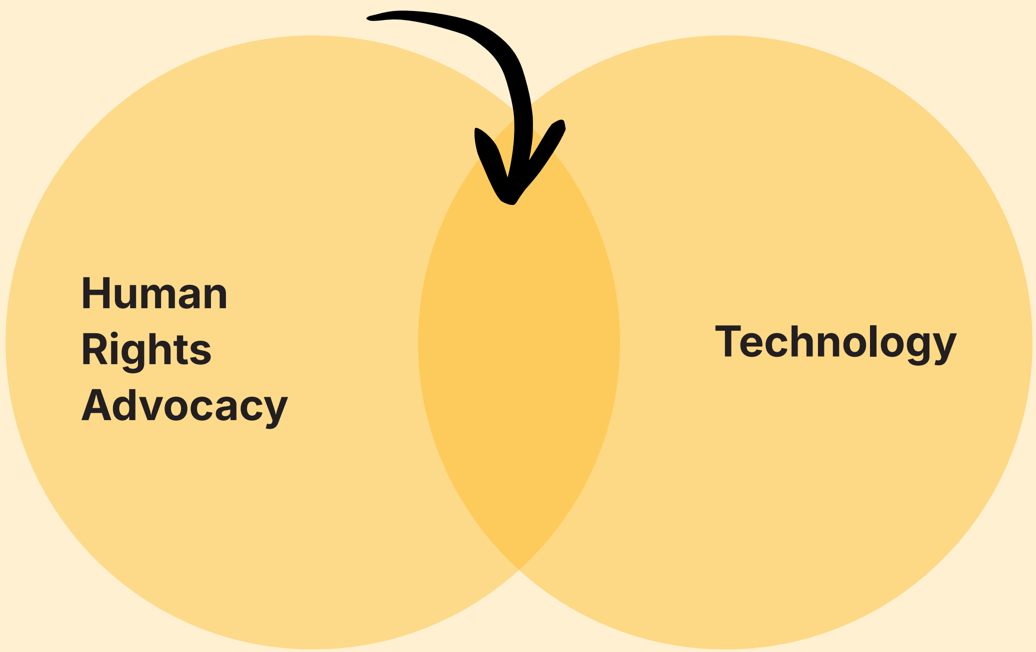
There are increasing advancements in new technologies and data analytics being used to study and report on conditions that impact human rights. Analytic tools can be used to study large amounts of information, coming from sources like cell phone records, social media or sensing technologies, to identify potential threats and to help predict violations.[3] However, these same tools are not being as aptly applied within the world of human rights advocacy as in intelligence, data science and other fields.[4] GRIL wants to bridge this gap, by leveraging the work of technologists and translating their methods into compelling tools for advocacy work.

Over the last decade, we have seen a trend among human rights researchers to turn to digital sources of information—user-generated content shared online, satellite images, government statistics, and more—to document incidents and patterns of violations.[5] Although documentation strategies have increasingly relied on digital sources of data, advocacy methods have yet to integrate more advanced applications of data science techniques.[6] These techniques can detect patterns and relationships not discernible through conventional methods, offer evidence of violations, and support justice work in powerful ways.

How will we intervene?

Given how digital technologies have been weaponized to target vulnerable communities, there is legitimate skepticism among many human rights groups about using these tools. Deep integration of new technologies into human rights advocacy will require cross-disciplinary collaboration among lawyers, researchers, social scientists, technologists, and experts across other relevant fields. The emerging methods must also serve victims and vulnerable communities, working in collaboration with frontline human rights organizations to align our interventions with the priorities of directly impacted communities. How human rights professionals harness new technologies is just as important as what these technologies generate. Therefore, our utilization of new technologies must comply with human rights protections and avoid placing victims and communities at greater risk.[7] With all these complexities in mind, we decided to adopt a human-centered design methodology, confident a people-first approach would guide responsible integration between technology and human rights advocacy.[8]

Finally, by training graduate students to leverage digital technologies, the GRIL Clinic will create a pipeline of professionals who are ready to harness the power of digital technologies in service of advocacy efforts. Their toolkit will include methods that convey complex relationships between facts and law, enhance audience engagement, enable proactive decision-making, and/or foster empathy and awareness of pressing social injustices.


Human
Rights
Advocacy
Technology

CONCEPTUAL FOUNDATIONS

Conceptual Foundations

The planning process to design GRIL is grounded in the following concepts native to data science, applied design, and strategic planning:

The Data Science Pipeline

One foundational framework guiding the GRIL Clinic's methodologies and operating principles is the *data science pipeline*. The data science pipeline represents the stages and processes of how data is treated, from initial collection to the generation of insights that inform decision-making.[9] Although the specific steps and tools vary across individual projects, we adopted a four-step framework to describe how data science supports human rights advocacy efforts:

Step 1. Documentation
All projects need data. This initial stage involves the collection of data, either manually or automatically.[10]

Step 2. Analysis
In this second stage, descriptive statistics and exploratory methods are applied to uncover patterns, trends, and relationships. Analysis tools can include preprocessing and descriptive statistics.

Step 3. Modeling
After having preprocessed and understood the data, a model is trained, tested, and evaluated to classify, cluster, mine, analyze, or process the data.[11] This helps to identify patterns, themes, and more.

Step 4. Visualization
This fourth stage involves creating a visual representation of the data or model to communicate a story.

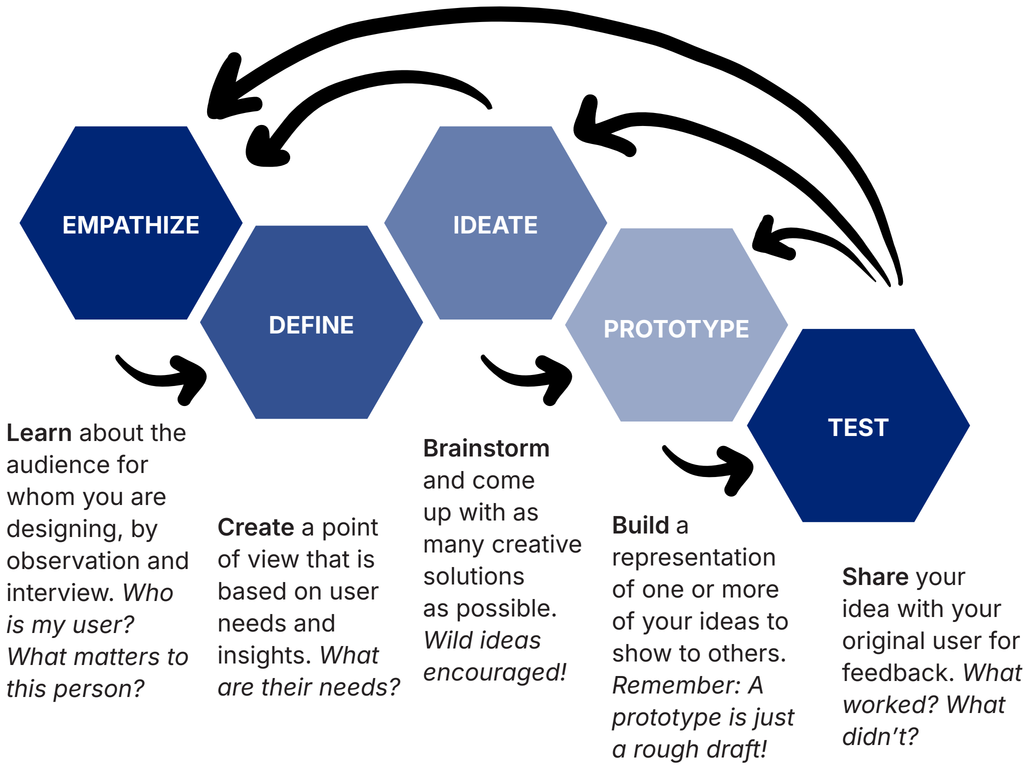
The data pipeline's structured approach not only brings clarity to our work, but also guides our ongoing process of listening and experimentation. Through this process we aim to (a) uncover key gaps in data pipeline processes within human rights advocacy and tech-for-good efforts; (b) provide support to amplify these efforts; and (c) experiment on the edges of data pipeline practices to innovate new ways of working. This ongoing mapping informs key opportunities for GRIL to support stronger data practices, and therefore better advocacy outcomes.

Applied Design & Innovation Management Tools

We used techniques from applied design and innovation management to guide our exploration.[12]

Design-Thinking

Design-thinking offers a rigorous process of discovery and creation to guide new innovations, grounding technical design practices within people-first (a.k.a. human-centered) methodologies from the social sciences.[13] Initially developed for consumer and business pursuits, design-thinking has been successfully adapted for social innovation, including improvements to legal practice that center people's needs, desired outcomes, and well-being.[14] The design-thinking process begins with "empathy"—exploring the needs and interests of the people we hope to serve. During this step, we engage in primary research to better understand people's needs, motivations, behaviors, challenges, pain points, desires, and more. Rich information from people's lived experiences becomes fertile ground to "define" the most pressing needs and "ideate" possible solutions. Solutions can then be developed, prototyped, and tested before scaling them to a broader audience. The study GRIL conducted this spring reflects the completion of the first three steps in the design thinking process: empathize, define, and ideate. Prototyping and testing will begin in Fall 2025. With many feedback loops across the five steps, design-thinking is an adaptive process rather than a linear one.



Source: Design-Thinking. Stanford Design School (The 'D' School)

The Ambition Matrix

We also applied an innovation management framework called the Ambition Matrix.[15] The Ambition Matrix maps possible innovation across a 2-dimensional grid of "who we serve" and "what we do." *Core innovations* are closer to home, making small adaptations to things we already do and/or the people we serve. *Adjacent innovations* step a bit further into the unknown as we consider new ways of working, new tools, and new audiences. Finally, in *transformative innovation*, we are often creating first-of-their-kind offerings and/or working with far-reaching audiences.[16]

The Ambition Matrix has been effectively adapted by social purpose organizations to guide strategic innovation and allocate resources across varying levels of impact.[17] Ethicore, consultants to public and private entities, advocates for INGOs to use the matrix as a diagnostic tool to assess their innovation ambition, urging organizations to move beyond operational improvements and invest in transformative approaches that address root causes of social challenges.[18] The matrix provides a structured framework to align innovation efforts with mission-driven goals.

We applied the Ambition Matrix to illustrate where different stakeholders fall, ranging from traditional actors in human rights advocacy to more recent entrants contributing to the field. We also used it to reflect on emerging tools and methodologies. Starting with conventional practices like documentation and public campaigns, we then traced the introduction of creative communications and digital storytelling; followed by the application of data science, modeling, and open-source methods; and, most recently, the emergence of generative AI tools. Taken together, these developments form a two-dimensional graphic tool that helps map where various initiatives and projects fall, from core to transformational innovation. This exercise was useful in reflecting on how the GRIL Clinic might push the field beyond its comfort zone and how we can draw inspiration from other sectors—redesigning and repurposing a broad range of tools for advocacy work.

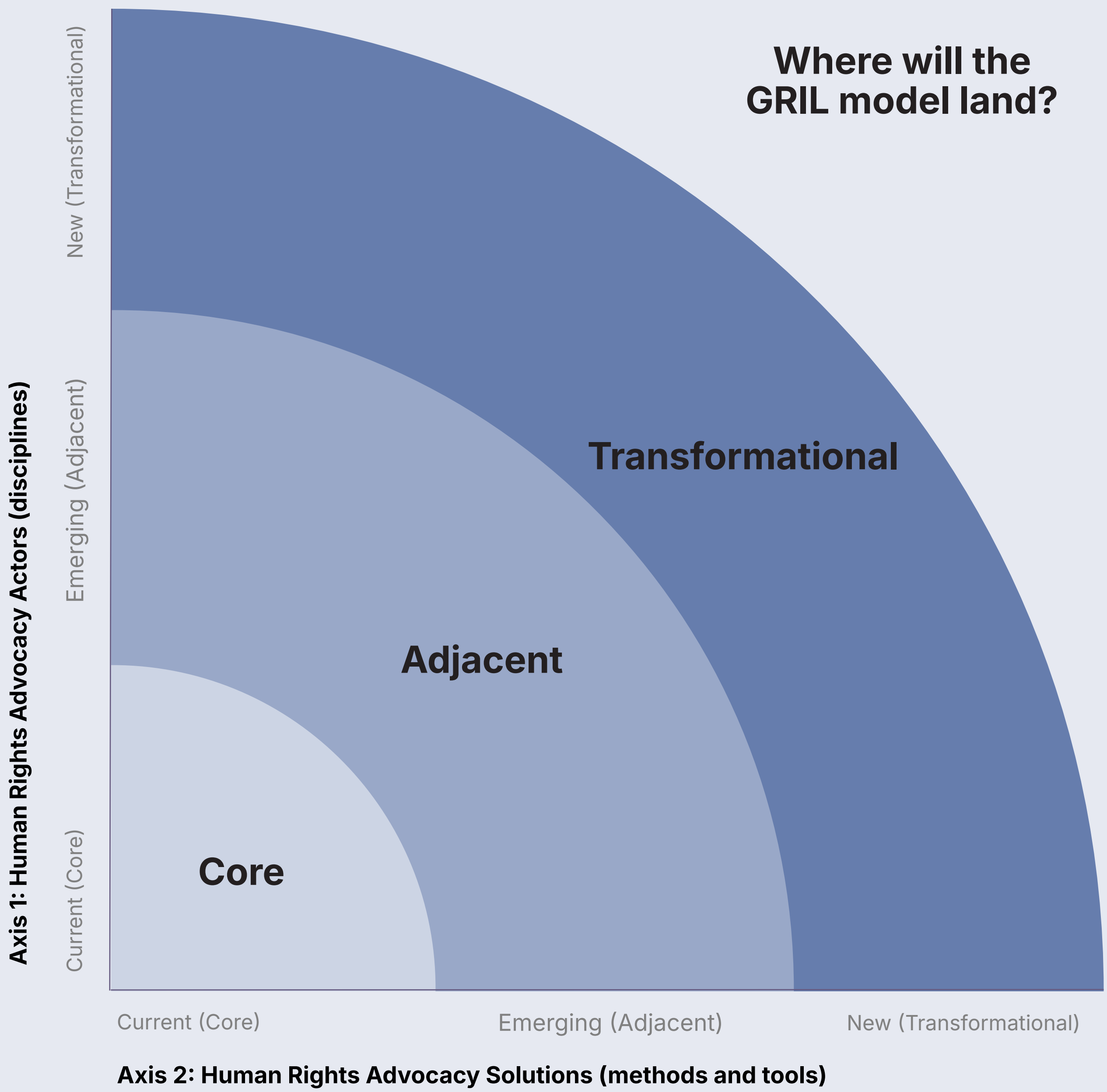
Axis 1: Human Rights Advocacy Actors (disciplines)

Front-line activists HR professionals Lawyers	Communications professionals Data scientists Designers Statisticians	Emerging technologists Engineers ***Who else??***
Current (Core)	Emerging (Adjacent)	New (Transformational)

Axis 2: Human Rights Advocacy Solutions (methods and tools)

Documentation Forensic evidence Legal actions Public campaigns Testimonies	Creative communications Data visualizations Design Digital storytelling Drone data Machine learning Open source investigation	Generative AI Sensor data Virtual reality ***What else??***
Current (Core)	Emerging (Adjacent)	New (Transformational)

The Ambition Matrix



Polarities-Thinking

There are complex tensions within the fields of technology and human rights advocacy. For example, the tensions between old and new, public and private, stability and change, innovative and predictable—just to name a few.[19] These tensions only become more complex when exploring a multi-disciplinary framework to bridge technology and human rights advocacy into a collaborative field of practice. Polarities—a mindset of managing tensions rather than solving binary problems—is a useful tool in all walks of life, but is particularly useful when navigating complexity.[20]

Rather than choosing one value over another, polarities-thinking emphasizes leveraging the strengths of both sides to create sustainable, adaptive solutions.[21] We move away from binaries of "right" and "wrong," surfacing the greater purpose we can achieve and the deeper fear we hope to avoid. When mapping polarities, we identify the positive and negative aspects of both ends of a spectrum, the early warning signs that we are moving toward one extreme, and action steps to bring us back into balance.[22]

Inspired by previous applications of polarities-thinking for social innovation, we applied polarities-thinking throughout our process to unearth tensions and develop solutions that balance seemingly contradictory concepts.[23] To do this, we developed a *'this **AND** this'* mindset, instead of a *'this **OR** this'* mindset. Polarities that arose in our exploration included the following:

Speed	Quality
Data-Driven	Principles-Based
Private	Public
Planned	Emergent
Technology Partnerships	Ethics-First Approach
Data Quality	Speed of Collection & Modeling
In-Depth Information	Engaging, Short-Form Content
Best Pathway (New Futures)	Path Dependency (History of Organizations)
Artificial Intelligence	Environmental Conservation
Facial Recognition	Identity Protection
Searchable Databases	Privacy
Efficiency & Standardization	Emotional & Social Connection
Quantitative Precision	Qualitative Impact
Manual	Automated

METHODOLOGY

Methodology

Overview

During the study period of January—April 2025, our primary data was collected via stakeholder interviews and student focus groups, both of which contribute to the design-thinking stages of Empathize and Define. These primary research approaches helped us explore how emerging technologies might further enable human rights advocacy, and what contribution the GRIL Clinic can make to the field.

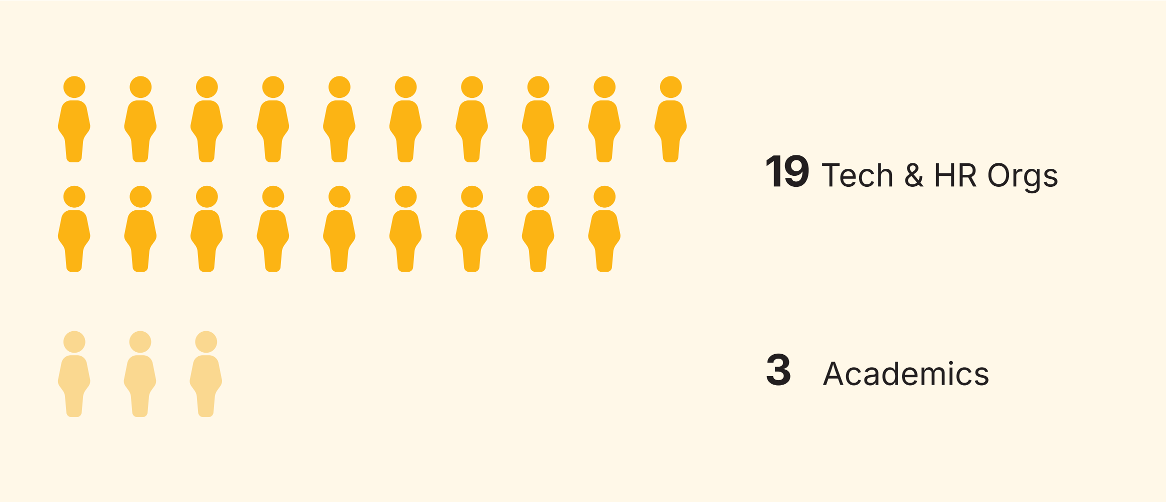
Stakeholder Interviews
We conducted a total of twenty-two interviews. This number included nineteen interviews with practitioners working in the intersection of technology and human rights, and three interviews with academics who had similar niche expertise.[24]

Student Focus Groups
We conducted three focus groups with a total of twenty-one students at UC Berkeley to better understand student expectations for skills development and impact work. Students participated from both the Law School and the Information School (I School).[25]

Desk research was integrated across our methodology. Foundational knowledge from the fields of human rights, data and technology, and design served as the scholarly underpinning for our exploration. Syllabi and reference lists were incorporated into the study's research plan, and continued desk research was conducted throughout our interviewing to support better outcomes. Desk research sought to unearth existing knowledge, players, tools, and practices regarding the intersection of human rights advocacy and emerging technologies (e.g., machine learning, generative AI, and 3D modeling). This helped to inform our overall learning, and enabled us to adjust our interview research questions to each interviewee's unique experience and contribution to the field.

Stakeholder Interviews

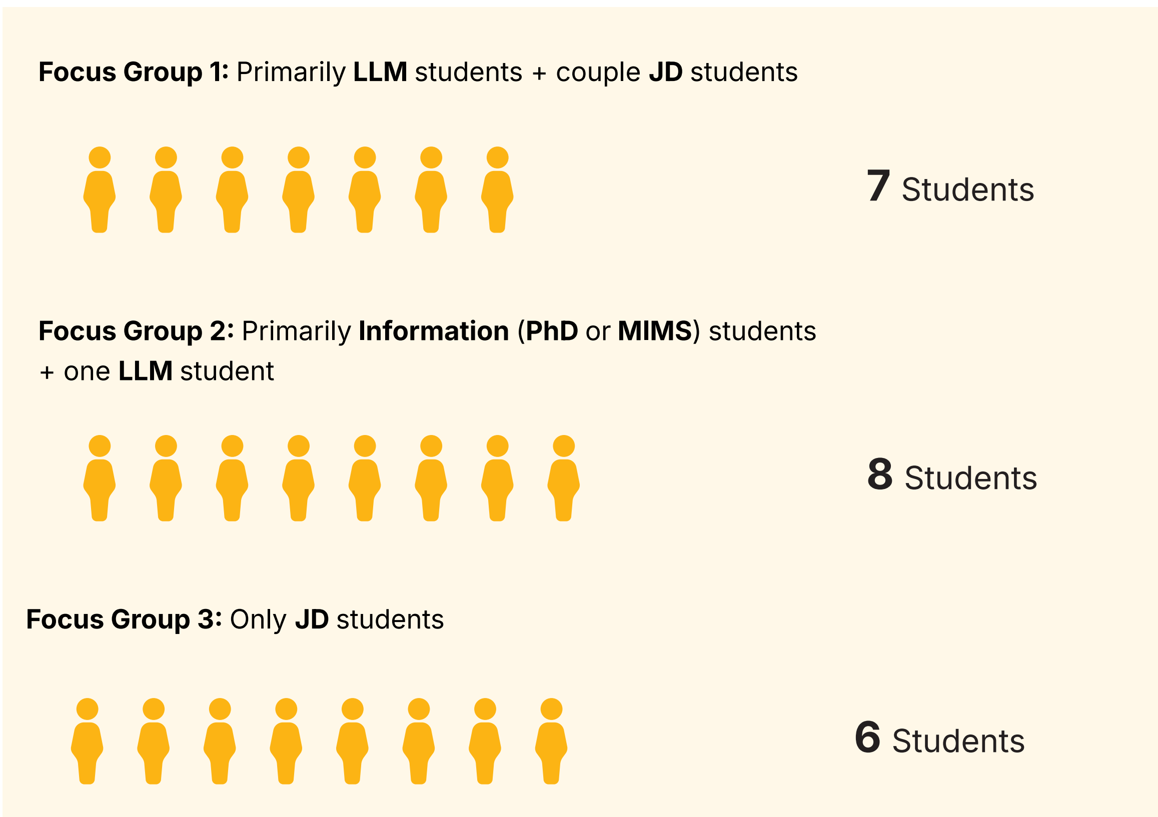
Stakeholder interviews were semi-structured. Our interview protocol explored organizational approaches to technology and human rights, related projects and methods, collaborative approaches to interdisciplinary work, resource constraints, needs, roadblocks to implementing technological solutions for human rights work, and GRIL's potential contribution to the field. We completed a thorough desk research and pre-reporting process before each interview, which contributed to the customization of the interview protocol for each interview. In addition to note-taking, recording, and transcription, a post-interview synthesis document was completed after every interview to summarize the key learnings.



Based on our field expertise, the research leads invited organizations at the forefront of these emerging practices to interview. We sought and achieved a balance between technologists using their tools for human rights policy or advocacy, and human rights practitioners that were incorporating data analysis and data visualization into their reporting and advocacy work. International and national NGOs, representatives from international organizations, and academics were included in the sample. Interviews were anonymized to facilitate candid conversation (this is why the interviewees are not identified by name) and demographic information was not collected.

Student Focus Groups

We conducted three focus groups with twenty-one UC Berkeley students to better understand students' expectations for professional skills development, organizational clients they would like to serve, and potential project topics.[26] Students participated from both the Law School and Information School. This multidisciplinary sampling helped us to balance the needs, aspirations, and ways of working with and between the two student groups. The focus group protocol explored (1) general clinic goals for students (desired practical experiences, organizations of interest, skills development), and (2) feedback on the GRIL Clinic idea (what was compelling, suggestions for improvement). The focus groups were recorded, transcribed, and summarized for key takeaways.



Analysis

Working from interview transcripts, our analysis employed an inductive method to identify and analyze key themes within the following categories:[27]

- Challenges
- Ideas for GRIL
- Partners
- Success Factors
- Software/Infrastructure
- Future Uses of Technology
- Data Pipeline - Documentation
- Data Pipeline - Analysis
- Data Pipeline - Modeling
- Data Pipeline - Storytelling

Supplementary analysis included post-interview summaries, classroom analysis workshops, and ongoing innovation team reflections that were completed on a weekly basis. Our Research Findings reflect our synthesis of these sources.

We also integrated design-thinking concepts and tools into our data analysis, as reflected in the Concept Development chapter which identifies our target clients, collaborators, and students as well as our service model.

Limitations

The following limitations to our research can be noted:

- **Small sample size:** We conducted twenty-two interviews with tech and human rights practitioners, and conducted three focus groups with twenty-one students from UC Berkeley's law and information schools. The aggregate sample size from interviews and focus groups was forty-three people. While extremely useful to develop early learnings and guidance for the direction of the GRIL Clinic's growth, this smaller sample size limits the generalizability of our findings.

- **Sampling bias:** We recruited research participants largely from our collective professional networks. While our networks are broad-reaching across human rights advocacy, tech for good, and technology fields, our exploration would benefit from additional insights drawn from a broader network of practitioners.
- **Short study duration:** A compressed study period of four months restricted the total number of interviews and focus groups that could be conducted, and the scope of desk research that could be pursued.
- **Research bias or qualitative interpretation:** While the research team worked to limit bias introduction in analysis and synthesis, the subjectivity of qualitative research can influence data interpretation.

Supplementary analysis included post-interview summaries, classroom analysis workshops, and ongoing innovation team reflections that were completed on a weekly basis. Our Research Findings reflect our synthesis of these sources.

Continued Research

In Fall 2025, we will begin a "prototyping-to-learn" process, learning what works and what does not through applied client projects. We will adapt our approach as new learnings and feedback arise. Our commitment to ongoing evaluation and transparency means that if any interventions prove less effective or potentially problematic, we will refine our methods to minimize any negative impact.

We will regularly review our findings to inform immediate adjustments and maintain alignment with our goals. We will employ a mixed method approach to collecting assessment data. These data will be used to evaluate the GRIL Clinic model in two key areas: service delivery (how well it resonates with and serves our clients) and learning outcomes (the extent to which it supports and advances students' professional development needs).

In the Winter of 2026-2027, we will conduct a comprehensive, in-depth review of the entire pilot phase. This deep analysis will inform the development of an updated operational model for the GRIL Clinic, incorporating all lessons learned and best practices identified.

Our intention is to share these key findings and recommendations openly with our community of practice, fostering a culture of continuous improvement and collaborative learning.

We will consider additional research to continue designing the GRIL Clinic to higher levels of fidelity, and to fill remaining knowledge gaps. Areas for further investigation will likely include: (a) expanding interviews to technologists who are not involved in human rights advocacy and to human rights practitioners who are not incorporating data analytics into their work; and (b) engaging a growing base of professional students at UC Berkeley (e.g., business, computational science, design, education, information, journalism, public health, public policy, and social welfare).

RESEARCH FINDINGS

Research Findings

What did we learn from our research participants?

Part 1. Exploring the Field: Findings from Stakeholder Interviews

We identified the following insights about the state of the field of applied technologies for human rights advocacy:

Research Finding 1. Ethical Vigilance Among Human Rights Organizations Regarding the Adoption of Technology

Human rights organizations are aware of the legal and ethical complexities of integrating technology into their work. While technology can enhance advocacy efforts, it introduces new risks that require consideration.

The interviewees acknowledged that technology offers powerful capabilities for advancing human rights, but it also brings ethical challenges that require careful attention. We have identified at least three common sources of concern surrounding this polarity.

- **Big tech skepticism:** There is a significant gap between the resources that big tech companies possess compared to human rights organizations. Big tech companies are capable of hiring leading talent with higher compensation, and have computing capacity that NGOs do not. Therefore, big tech companies have emerged as a common partner for human rights and applied technology projects. Most human rights organizations have benefited from these partnerships, but some remain concerned about the misalignment of values and resource disparities. As one interviewee noted, they are worried about "our dependence on ... charity from big tech."
- **Telling stories without harm:** Advocates need to find a balance between telling stories about human rights abuses without putting victims, families, or vulnerable communities at greater risk. This challenge is magnified because in many cases, for example when using open source information, advocates have not received the consent of victims to tell their story. An interviewee explained this bind as follows:

> *There were a lot of ... interesting technical questions that came out of that project ... How do we do this work in a way that is doing no harm? ... Representing their stories accurately and responsibly, making sure that nothing that we do is going to have detrimental impacts on those community members by surfacing these stories and documenting what happened. ... [T]hat's a question that arises in all of these projects, because usually you don't have the consent of the people that you are documenting.*

- **Environmental impact of AI:** One interviewee summarized this concern, saying: "A lot of the human rights violations that occur are directly connected to ongoing exploitation of the environment, and so it feels a little bit counterproductive to be relying on such carbon heavy data processing pipelines." This finding points to the multi-dimensional ethical concerns in incorporating on-line and emerging technologies into human rights research and advocacy, which are not easily solved because they are inherent in the application of these tools. This is a classic polarity with which organizations will continue to grapple.

Research Finding 2. Evolving Use of Digital Technologies for Investigations and Advocacy

The landscape of human rights and technology is rapidly changing. Human rights organizations have adopted digital technologies to complement their traditional methods.

Human rights organizations are transforming their investigative and advocacy work by thoughtfully integrating digital technologies alongside traditional methods. While some continue to prioritize manual, case-by-case analysis, many also use data analysis and digital visualization tools. Multiple organizations explained how technology is helping them to create more engaging narratives that can reach a wider audience. For example, one interviewee mentioned:

> *We are moving more and more to interactive visualizations. It's one kind of technological advance that we're doing. We're doing less and less PDF reports and more and more micro sites and engaging content that you can mouse over. It does something and you can click on it and explore a bit more. So, we've focused a lot on getting those things better on our side.*

Other organizations are embracing a wide range of technological advancements, including machine learning, large language models, satellite imagery analysis, and network analysis to uncover patterns and perpetrator networks. Yet, these types of analyses require additional resources that often serve as a barrier to their adoption. As mentioned by one interviewee, the main challenge they face in integrating technology is capacity. According to the interviewee: "There's a lot that we leave on the table because we don't have the manpower/person power to do it ... At times funding ... things cost money."

Lastly, the adoption of AI-powered tools, such as those that assist with coding and data validation, further streamline research processes and increase productivity. According to one interviewee, "everybody has their favorite thing. I use GitHub copilot,[28] mostly for coding where it ... tries to predict your next line of code. If you comment on your code a lot, it knows what you're going to do next."

We see that human rights groups recognize the power of new technologies and are using them to improve operational efficiency and/or enhance communication efforts. As these technologies continue to proliferate, so too will the need for vigilance in their ethical use.

Research Finding 3. Complexities of Authenticating and Introducing Digital and Technical Evidence in Court

As digital evidence and evidence generated through data science techniques becomes more central to the documentation and analysis of human rights violations, new challenges emerge around their use in legal proceedings.

As digital and data science-based evidence becomes increasingly central to the documentation and analysis of human rights violations, their use in legal proceedings presents significant complexities. Courts are now more frequently confronted with highly technical evidence that most judges are not equipped to fully understand due to their primarily legal—rather than scientific or technical—backgrounds. There is a dependence on expert witnesses but, as one interviewee who participated in international adjudications noted, "it's very hard for a court to know which of those experts [referring to two experts using technical evidence from opposing roles] is more convincing." Given the nature of evidence from emerging technologies, they proceeded to note, "especially on evidence of this sort, where it's just not comfortable or familiar to judges."

Additionally, there is an ongoing tension between embracing innovative technologies and ensuring the evidence produced is legally admissible and verifiable. The use of new or untested digital tools, while potentially powerful for uncovering and documenting violations, can introduce risks if their reliability or methodology is questioned in court. As a result, human rights organizations and legal teams must carefully balance the benefits of technological innovation with the strict requirements of legal admissibility, ensuring that the evidence they present, if cutting-edge, is robust enough to withstand judicial scrutiny. As one interviewee pointed out:

> ***One of the debates generally was to use some of the new AI things like facial recognition to do analysis across all these different reports and then come up with a map for some sort of visual representation of the ... big patterns. Generally, those things have not been tested in criminal courts involving international crimes. ... [Y]ou run the risk of including something in a criminal complaint that goes to law enforcement or a prosecutor's office and ... gets thrown out because it's not been tested, they're unsure of the findings, or it's somehow invalidated the [case]file or contaminated other evidence.***

In summary, while digital and technical evidence offers powerful new tools for human rights litigation, it also introduces significant challenges around expertise and legal admissibility. Courts and advocates must strike a careful balance between innovation and reliability to ensure that this evidence can effectively support justice.

Research Finding 4. Resources Are a Critical Barrier to Scaling Human Rights Technology

Resource limitations remain a significant obstacle to the widespread adoption of technology in the human rights sector.

The effective adoption of digital technologies in human rights work is often hindered by significant resource constraints: technical, infrastructural, and human. Organizations face challenges such as limited access to data storage, processing power, and other requirements for analyzing large or non-traditional datasets. This was underscored by one interviewee, who described the main challenge to incorporating technology into their human rights work in this way:

> *Resources, quite frankly … . [I]f we had the resources, a lot of these challenges would go away. Are we right-sized for adapting to the technologies that are emerging? We build tools, but do we have the resources to support them? Do we have the cash flow to do the API [Application Programming Interface] calls that we need to do, or the data storage that we need, or the processing power that we need? ... The tricky questions we're coming across are all … resource-related.*

A lack of dedicated IT departments is another persistent challenge for many NGOs, who instead rely on external consultants. This reliance limits the ability of organizations to experiment with or fully implement new technologies. One interviewee explained that the main roadblock to realizing their technological vision is a shortage of human resources. According to this person:

> *[I]t's hard to see a civil society organization, small or medium, with an IT department. Generally, it is one consultant that dedicates a couple of hours a month to keep the DNS [Domain Named System] working the domains, the Google workspace, and then they have another agency that builds websites, etcetera ... Perhaps someone that analyzes data, but there they don't have ongoing, everyday working IT teams with them.*

Overall, both financial and human resource constraints significantly impede the ability of human rights organizations to adopt, scale, and sustain technological solutions. These limitations not only affect day-to-day operations but also restrict the sector's capacity to innovate and respond to emerging challenges in the digital age.

Part 2. Exploring GRIL's Contribution

We received input about the role that the GRIL Clinic might play within the field, both from stakeholder interviews and student focus groups. We report key insights from both groups, separately below.

Feedback from Stakeholder Interviews

One of the final questions we asked our stakeholders was to identify the specific contributions they believe GRIL can make to the field. Across a diverse set of respondents, several common themes emerged:

Contribution 1. Capacity Building and Technical Literacy

Interviewees identified that GRIL could contribute to the field by training the next generation of human rights advocates. Unlike traditional law school courses, a clinic can immerse students in the practical realities of human rights work, exposing them to the complexities of data-driven evidence and legal argumentation. One interviewee highlighted the importance of providing students:

> *Some kind of education, statistical education and … levels of numeracy in order to be able to accept and or critique arguments that are made using data. [E]specially [because] those arguments become more complicated and more sophisticated as the data … becomes … bigger and more heterogeneous.*

Although lawyers are not expected to be technologists, law students can learn, as one interviewee put it, to "know what technical stuff is available. They need to understand what its limitations are and most importantly, they need to know what the questions are."

GRIL can also contribute important training to future technologists. Technology students will gain hands-on experience with what one interviewee defined as “the hard part” by serving human rights organizations with unrefined or complex datasets. According to this interviewee, “the hard part is figuring out on the front end how to process the data to get it into the state where you can use it, because you get this data in a huge tangled mess.”

Throughout their GRIL experience, graduate students could hone their skills in a multi-disciplinary, client-service practice setting. Technology students could not only learn to master technical methodologies but also how to translate complex concepts into accessible language. As one interviewee expressed, “there’s a really strong role for people who are able to speak about very specific applications of technologies in a lot of detail and to explain the technical methods that were applied in a way that other organizations might find them useful and be able to adopt them.” Law students could gain data and technology literacy while also learning how to translate legal elements into parameters for data analysis.

Multidisciplinarity is key. As one interviewee put it:

> *The technologists really don’t deeply understand … human rights … It’s almost like they need to embed with the human rights investigators or human rights lawyers to help identify what’s needed. And unfortunately, the human rights lawyers often don’t even know it’s possible from a technological perspective to identify patterns.*

Contribution 2. Data Visualization

Another area where GRIL could have a transformative impact is in the creative use of data visualization to enhance human rights research and advocacy. By leveraging the resources and multidisciplinary talent within universities, clinics can experiment with innovative ways to present complex data, making findings more accessible and compelling for a range of audiences, from courts to the general public.

Effective data visualization not only aids in communicating intricate patterns and trends but also helps to clarify narratives, highlight injustices, and support strategic litigation or policy advocacy. As one interviewee noted: “There’s a lot of creativity in universities, so some of the things around storytelling—or using technology to communicat[e] storytelling narratives – could be creative ways to use that.”

Contribution 3. Data-Driven Legal Analysis

GRIL can play a critical role in advancing foundational legal work at the intersection of technology and human rights. As the use of digital and data-driven evidence becomes more prevalent in human rights advocacy, such as litigation and reporting, clinics are uniquely positioned to tackle the complex task of translating legal concepts into data-driven frameworks and designing data analyses to support legal claims. This work includes clarifying legal definitions and developing methodologies for authenticating and presenting technical evidence in court. As one technologist noted of GRIL:

> *[There] are many tasks you can tackle. ... For example, to define what is a human rights violation. ... In the legal domain, it seems to be a very defined concept, but from the data you cannot [always] reproduce the conditions to define this concept.*

Stakeholders with a legal background emphasized the value of data in strengthening human rights claims, while technologists addressed their need to be guided by clear legal questions and definitions.

Contribution 4. Slow Think Process and Experimentation

A distinct advantage of a university-based model is the ability to operate at a slower, more reflective pace than most NGOs or human rights organizations. Stakeholders noted that this environment allows for deeper analysis, intellectual risk-taking, and the exploration of questions that might otherwise be neglected due to immediate operational pressures. The academic context encourages experimentation, where projects can be designed not only for impact but also for learning and methodological innovation, even if that means some initiatives may not yield immediate or tangible results. As one interviewee pointed out:

> *There's not a lot of room for experimentation or exploration, because we're designed to be ...operationally efficient and effective. ...[T]he partnerships that I'm working on with other academic institutions are really things that I don't know whether they will actually work or not.*

Several interviewees suggested topics for deeper analysis, including guidance for how groups can think about the ethics of data collection where the law is unsettled or the ownership of the data is ambiguous.

Contribution 5. Multidisciplinary Collaboration and Institutional Platform

GRIL benefits from the institutional strength of UC Berkeley. This translates into the ability to work with stakeholders from law, data science, engineering, journalism, and other areas of knowledge. This multidisciplinary foundation is a significant asset, allowing clinics to approach complex human rights challenges from multiple perspectives and to craft innovative, holistic solutions. As one interviewee noted that working within such multidisciplinary teams has distinct advantages, saying, "There's a lot of creativity that could go into: 'Oh, we've got this whole playground to work with.'"

Additionally, universities are trusted convenors and can bring people together on neutral ground. This institutional credibility allows universities to act as impartial facilitators, fostering open dialogue among stakeholders who may not otherwise have the opportunity to engage with one another. This ability to unite individuals from various backgrounds and areas of expertise not only enriches the conversation but also leads to more comprehensive and innovative approaches to addressing complex human rights challenges. As an interviewee illustrated:

> *[U]niversities have such an important role, not only in the way in which they come on institutionally. You have a different power than organizations. ... You have more tools, more people, ... a diversity ... of ... disciplines that can come together with a multi-disciplinary perspective, which I think is super important when working with human rights.*

Stakeholders expressed enthusiasm for a clinic that would harness resources across the university to experiment, support, and ultimately advance ethical uses of applied technologies to human rights work.

Feedback from Student Focus Groups

Within UC Berkeley, we took our early ideas about the GRIL Clinic to students at the Law School and the Information School.[29] In our focus groups, we explored how we can better design the GRIL Clinic, what students want to do in this space, how they can contribute to these efforts, their desires for meaningful professional experiences, and more. Here's what they had to say:

Contribution 1. Interdisciplinary Collaboration and Skills Exchange

We interviewed students in separate focus groups organized by discipline, allowing us to deeply understand the needs and preferences of each cohort.

Both groups of students responded enthusiastically to the proposed concept of the GRIL Clinic, viewing it as an innovative and much-needed response to the evolving intersection of technology and human rights. A central theme that emerged was the potential for bridging legal expertise with technology and data analysis. This emphasis on co-creation and collaboration underscored students' desire for the clinic to be grounded in both academic rigor and practical, community-based impact.

Law students were especially drawn to the opportunity to collaborate with technologists, learn data science methodologies, and contribute to meaningful advocacy efforts through new mediums. The idea of integrating legal thinking with data modeling, visualization, and storytelling was described as compelling and transformative. Their perception was that this approach could move legal education beyond traditional methods and into real-world applications that resonate in an increasingly digital society.

Students at the Information School were similarly enthusiastic about collaborating with lawyers, translating their skills to legal contexts, and finding ways to blend their ways of working into legal workflows. Students valued the prospect of working across disciplines—law, design, data science, policy—and applying their skills to live case studies, especially in partnership with resource-constrained organizations. They expressed interest in not only developing technical tools but also engaging with grassroots communities, NGOs, and global partners to create accessible, multilingual, and interactive advocacy tools.

Contribution 2. Building Ethical Use Cases for Technology in Human Rights Advocacy

Both law and technology students emphasized the critical need to navigate the polarity of technology in human rights advocacy.[30] While digital tools and platforms can enhance advocacy, students acknowledged the inherent risks—including surveillance, censorship, and digital exclusion. They saw a vital role for the clinic in helping students and partners understand and mitigate these risks through secure communication strategies, ethical tech practices, and design choices that prioritize safety and inclusion. For many, the opportunity to explore how technology can be both a tool for justice, while mitigating its potential for harm, made the clinic's mission especially relevant and urgent.

There was agreement across Law School and Information School focus groups about the need to balance technological opportunities with risks, but there were some marked differences in approach across the two groups. Given their background in regulation and ethics, law students provided more comments about preventing the weaponization of technology and introducing ethical principles. Alternatively, Information School students made more comments about the practical design and implementation of technology tools to serve human rights advocates, along with collaborative methods of working with communities throughout these types of efforts. The Information School students demonstrated more hands-on experience working on tech-for-good projects compared to the law students, who demonstrated a more theoretical relationship to the topic.

Contribution 3. Meaningful Professional Experiences and Hands-On Mentorship

Another recurring theme was the desire for greater clarity, structure, and mentorship. Both groups of students called for clearer definitions of roles between legal and technical collaborators. Law students requested structured training in areas like data analysis and digital storytelling, while data and technology students sought training in how to effectively work with lawyers. They wanted the clinic to provide hands-on experience and robust mentorship for both law and non-law students, helping them understand advocacy beyond the classroom and gain tangible skills for the workforce. This included a request for more guidance on developing real-world projects, evaluating impact, and communicating complex legal or technical issues in accessible ways. Within the Information School focus group, there was a feeling that tech-for-good careers are difficult to locate after graduation, making university a prime opportunity to work on these topics.

Contribution 4. Partnering with Other Groups for Efficiency and Impact

Both groups of students offered thoughtful suggestions to strengthen the clinic's strategic design and partnerships. They recommended connecting with established advocacy and tech-for-good organizations to avoid duplicative efforts and amplify the clinic's effectiveness. Several expressed interest in seeing GRIL operate in conjunction with existing clinics or academic programs at UC Berkeley, to leverage synergies and broaden the clinic's reach. Information students suggested collaborating with a complementary course offering in the Information School, and law students recommended working in collaboration with complementary law clinics and centers. There was also strong support for clearly articulating the clinic's goals, expected outcomes, and success metrics—such as whether the primary focus is research, tool development, or both—so students could better understand how to contribute and measure their impact.

Contribution 5. Balancing Long-Term Impact with Short-Term Career Development

Across the board, students acknowledged the tension between long-term project impacts and short-term career development. One interesting challenge for the clinic will be creating a model where students can create near-term outcomes and develop meaningful professional relationships with practitioners in the field, while feeding into longer-terms project goals and impact models. Students might work on a single project for their whole semester, or work through a circuit of multiple projects in-flight.

In sum, law students and information students saw GRIL as a powerful opportunity to redefine human rights advocacy in the digital age. They were eager to be part of an initiative that could deepen their professional development and equip them with tools and framework that might shape a more just and equitable digital future.

CONCEPT DEVELOPMENT

Concept Development: The Emerging GRIL Model

This section reflects our current thinking about the GRIL Clinic's function and form. Based on our findings and analysis, we developed a perspective about our core mission, our stakeholders and partners, the services we provide, and how we enhance work at the intersection of technology and human rights.

Part 1. Who We Are

GRIL Overview

The Global Rights Innovation Lab Clinic (GRIL) stands at the cutting edge of global rights advocacy, harnessing the transformative power of data science and digital technology to drive change. Our mission is to revolutionize how rights are protected and enforced in the digital age.

Operating as a dynamic laboratory, GRIL collaborates with advocates, technologists, data scientists, and experts to reimagine advocacy strategies. We leverage advanced tools in digital technologies such as data analysis, machine learning, digital forensics, and AI to uncover hidden patterns, build compelling cases, and forge new justice pathways.

Our innovative approach employs a variety of methods, including the use of non-traditional data, the application of machine learning models to reveal patterns of abuse, and the creation of digital storytelling tools to generate public support. This approach applies digital technologies in service of human rights work. While we do not focus on the regulation of technology to comply with human rights law, we ensure our technological applications comply with human rights principles. We complement the important work on digital governance by developing methods to apply technology in a manner that safeguards individual and collective rights.

GRIL equips students and advocates with skills to bridge the gap between traditional legal practice and data-based, innovative technologies. Our participants become uniquely positioned to drive meaningful change in global rights advocacy, uncovering crucial insights and advancing justice.

As a new clinic, GRIL continues to be co-designed by our clinical students, offering them a dynamic learning environment. Students engage with actors across the technology for human rights landscape, exploring where the most potent opportunities and needs exist for digital technologies to elevate—and transform—global rights advocacy. Students acquire data literacy, enabling them to understand, interpret, and communicate various types of data, methods, and tools relevant to legal advocacy rights work.

Our Stakeholders and Students

We synthesized our stakeholder interviews and student focus groups into archetypes. A commonly used tool from human-centered design, archetypes (a.k.a. personas or profiles) build understanding and empathy about our diverse base of possible stakeholders, describing their needs, behaviors, motivations, pain points, challenges, and potential role in GRIL projects.[31] Illustrative rather than directive, archetypes are useful to center our stakeholders in our operating model, aligning our teams about who is involved in our work and what role each person will likely play. They also support communication and storytelling when we talk about GRIL's work to a broader audience.

The following hypotheses about our clients, partners, and students form the backbone that we will be testing through a prototyping-to-learn process in the coming semesters.

Client and Collaborator Archetypes

GRIL's Client and Collaborator Archetypes provide a general understanding of the clients and partners that will likely engage with the GRIL Clinic. The archetypes demonstrate the range of expertise that clients and partners will bring to the GRIL Clinic, which will shape the dynamics of our project work. Depending on the nature of the engagement, the following archetypes may be present as clients or involved as experts.

The Technologist & Data Science Expert

The Human Rights Data Scientist

The Human Rights Researcher/ Practitioner

The Legal & Policy Strategist

The Technologist & Data Science Expert

Occupation: The Technologist & Data Science Expert is a highly skilled professional who excels in harnessing the power of data to unravel complex problems. They apply sophisticated analytical techniques and cutting-edge machine learning algorithms to uncover meaningful patterns and trends from vast and diverse datasets. Their arsenal includes programming languages like Python and R, complemented by tools and platforms like AirFlow and Tableau.

Goals & Motivations: They find motivation in the pursuit of knowledge and the satisfaction of unraveling complex puzzles. They thrive on the opportunity to share their technical prowess and to contribute to groundbreaking projects that can make a significant impact.

Pain Points & Challenges: Primarily from backgrounds like statistics, engineering, and domain-specific fields, they typically lack specialized knowledge in human rights. This necessitates close collaboration with lawyers and social scientists to effectively translate raw data into actionable intelligence for human rights contexts. A primary challenge for these experts is communicating technical concepts to non-technical colleagues or clients. They often struggle to convey the intricacies and practical implications of advanced analytical methods in plain language.

You are committed to the question that they [the human rights expert] ask, and they need to feel that you really get to solve this question with the most rigorous process. But to do that, you need to understand all kinds of questions they ask in a [mission-oriented] or technical way. Obviously, you want to do that. You need to interact with the other researchers here.
- Key Informant Interview

Role in GRIL Projects: This expert can provide the technical solutions needed for GRIL. These can be related to software development, database management, statistical modeling, or user interface (UI)/user experience (UX) design, among others.

The Human Rights Data Scientist

Occupation: The Human Rights Data Scientist occupies a unique niche at the intersection of human rights advocacy and data science. They typically emerge as either technologists with a strong commitment to human rights or human rights experts leveraging data science as a powerful tool. Their role involves formulating critical human rights questions, developing technological solutions, and conducting or complementing legal research. To navigate this landscape, they rely on both technical skills and a deep understanding of relevant legal mechanisms.

Goals & Motivations: Driven by a profound commitment to human rights, their primary goal is to harness data science to address pressing human rights issues. They contribute to advocacy efforts by providing evidence-based insights and innovative tools that empower organizations. Their motivation stems from a desire to achieve tangible progress in the fight for human rights, fueled by an unwavering passion for equity and meaningful societal change.

Pain Points & Challenges: Managing highly sensitive data brings substantial ethical responsibilities, requiring secure tools and infrastructure. However, ensuring data security is financially challenging, especially in the non-profit sector. As one practitioner noted, developing their own solutions to avoid relying on big tech is ideal, but the cost of equipment is often prohibitive for non-profits.

Role in GRIL Projects: The Human Rights Data Scientist helps shape and execute projects, ensuring technical and human rights perspectives are integrated. They bridge knowledge gaps by teaching data literacy to non-technical students and human rights literacy to technical students. Acting as translators and facilitators, they foster cross-disciplinary collaboration while implementing solutions.

My background in NGOs and humanitarian work has taught me how to communicate complex findings in an accessible way.
- Key Informant Interview

The Human Rights Researcher/Practitioner

Occupation: The Human Rights Researcher/Practitioner works within an NGO dedicated to advancing human rights. These organizations analyze the human impact of laws and policies on vulnerable populations, investigate abuses often linked to conflict and repression, and collect testimonies, official statements, and neutral observations. Findings are shared to influence responsible actors, drive policy reform, spur justice efforts, and/or to support victims. They focus on specific issues (e.g., armed conflict, women's rights) and intervention types (e.g., documentation, policy analysis, training).

Goals & Motivations: They are driven by a passion for justice and a commitment to mission-driven work. They value human dignity, and want to create solutions to complex issues of injustice. Clear victories are rare, so they measure their success incrementally (e.g., public attention, access to decision-makers, policy change) while staying focused on the long-term.

Pain Points & Challenges: Digital technology is becoming essential, due to the rise of user-generated content and public datasets documenting human rights crises. However, practitioners often have limited digital literacy, acquired after learning traditional documentation methods. Some want to develop in-house tech expertise, while others seek external collaborations. They recognize that co-creating solutions with technologists could enhance human rights documentation and advocacy, but researchers remain cautious, prioritizing data security and ethical considerations.

> *I just think there's so much more that could be done with this data and what I really hate is the data sitting with us and all this powerful analysis and then it doesn't go out there and do something.*
> ***- Key Informant Interview***

Role in GRIL Projects: The Human Rights Researcher/Practitioner generates evidence for legal cases or advocacy tools. GRIL could also enhance their work by developing predictive modeling or other techniques to analyze large datasets for indicators of human rights violations.

The Legal & Policy Strategist

Occupation: The Legal & Policy Strategist is similar to the Human Rights Researcher/ Practitioner, but their focus differs. Researchers/Practitioners gather and share information to influence decision-makers, while Strategists hone in on specific advocacy approaches to achieve outcomes. For example, Strategists may initiate strategic litigation, file amicus briefs, advocate for legislation, or build political support. They work in human rights organizations at various levels and frequently participate in coalitions within their sector.

Motivations & Goals: Rule of law and justice are core motivating norms for these professionals, made measurable through specific interventions (e.g., the outcome of a court case, legislative initiative, or policy adoption). They have a relationship to directly impacted communities, although the depth and intensity will vary. They may be working in coalition with social movements and will be attentive to the synergies between their interventions and community mobilization and empowerment goals.

Pain Points & Challenges: Advocacy is central to their mission, and data science and technology are viewed as tools for this purpose. While some strategists work regularly with technologists, others do not. Confronted with human rights financial resource scarcity, they see unrealized potential for data visualization and storytelling to boost engagement with content in long-form advocacy documents (e.g., reports, pleadings). A lack of professional consensus on the standards for using digital technologies makes them hesitant to invest in emerging applications of digital technology.

Role in GRIL Projects: The Legal and Policy Strategist identifies goals of advocacy interventions. They also provide technologists with raw data, guidance, and feedback to create bespoke advocacy tools (e.g., interactive websites, GIS mapping, and building code to test legal hypotheses on large datasets).

It's about how do we harness technology for the good of individuals in society?
- Key Informant Interview

Student Archetypes

We synthesized our student focus groups into two student archetypes: Law Students and Information Students. The following pages provide a deeper look into their hopes for a clinical experience, including desired practical experiences, organizations of interest, professional relationships, and skills to learn. These archetypes are incomplete. One missing archetype are Public Policy students, who will join GRIL in the Fall 2025.

Law Students

Information Students

The GRIL Clinic will continue to grow the community of students who participate in its work, including additional professional programs like Design, Engineering, Social Welfare, Business, Computation Science, Education, Information Science, Journalism, and Public Health.

Law Students

Desired Practical Experience: Our Law Students are eager to gain hands-on legal experience, particularly at the intersection of human rights and technology. They want real-world casework that bridges large-scale policy with direct client interaction, moving beyond traditional litigation to focus on advocacy and policy work. Many seek opportunities to design projects from the ground up—identifying legal issues in international and digital contexts, setting deliverables, and seeing projects through to implementation. This practical exposure is seen as essential for building marketable skills and preparing for careers in international law, policy, and technology-driven advocacy.

Organizations of Interest: Law Students are interested in collaborating with a broad spectrum of organizations, including large international human rights groups like Amnesty International, Human Rights Watch, and the Norwegian Refugee Council, as well as UN and regional mechanisms such as special rapporteurs and expert bodies. They also see value in working with grassroots NGOs focused on advocacy, direct assistance, and data collection. Tech-centered organizations like the Center for Humane Technology and Tech Equity Collaborative were noted as appealing, along with government agencies and policy groups influencing legislation and migration policy.

Desired Relationships: Building relationships with advocates, faculty, and professionals in human rights law is a high priority. Law Students want mentorship from experienced attorneys and decision-makers who can guide their professional growth. They also hope to develop long-term networks that support career advancement. Interdisciplinary collaboration is especially important—students want to work alongside activists, technologists, and data scientists to address complex human rights challenges. A sense of community and cross-sector exchange within the clinic was seen as a valuable component of this experience.

Skills to Learn: Law Students seek to develop key skills such as interviewing and client engagement, legal research and writing in human rights contexts, and policy analysis that synthesizes information from multiple sources. They want to learn how to advocate for reform, present findings clearly to different audiences, and communicate across cultural and professional boundaries. Building technological literacy is also a priority, especially in areas like privacy, AI, and surveillance. Proficiency in tools such as data visualization, mapping, and digital storytelling is seen as increasingly important for effective legal advocacy.

Information Students

Master of Information Management & Systems (MIMS), PhD

Areas of Interest: Our Information Students are deeply interested in the intersection of technology and human rights, including ethical design, public interest technology, policy, product management, data science, and investigative research. Many want to bridge technological innovation with public interest work, particularly in areas such as privacy, cybersecurity, data governance, and advocacy.

Previous Professional Experiences: Information Students bring diverse experience from nonprofits, advocacy groups, and organizations focused on digital rights, privacy, and ethical tech. Some have contributed to policy research and political advocacy on issues like immigration, incarceration, and police budgeting. Others have worked in UX and product design, particularly in regulatory contexts tied to cybersecurity and privacy. Several have experience in investigative research and data analysis tied to human rights, while others come from corporate consulting roles implementing privacy standards internationally.

Existing Skills & Interests: They have strong foundations in ethical tech, policy analysis, and human rights research. Many use data science for advocacy and transparency, and bring experience designing user-centered, ethically responsible technologies. They value interdisciplinary approaches, integrating law, policy, and technology to address pressing social challenges.

Desired Relationships: They seek collaboration with law students, attorneys, and advocates to bridge gaps between tech and law. Building trust with client organizations and affected communities is a priority. Students also hope to build mentorships and networks with professionals across human rights, tech, and policy fields.

Skills to Learn: Information Students are eager to build technical skills for human rights applications. They want to communicate technical ideas effectively in legal and advocacy settings, strengthen independent learning, and apply technology ethically in real-world contexts.

Part 2. What We Do

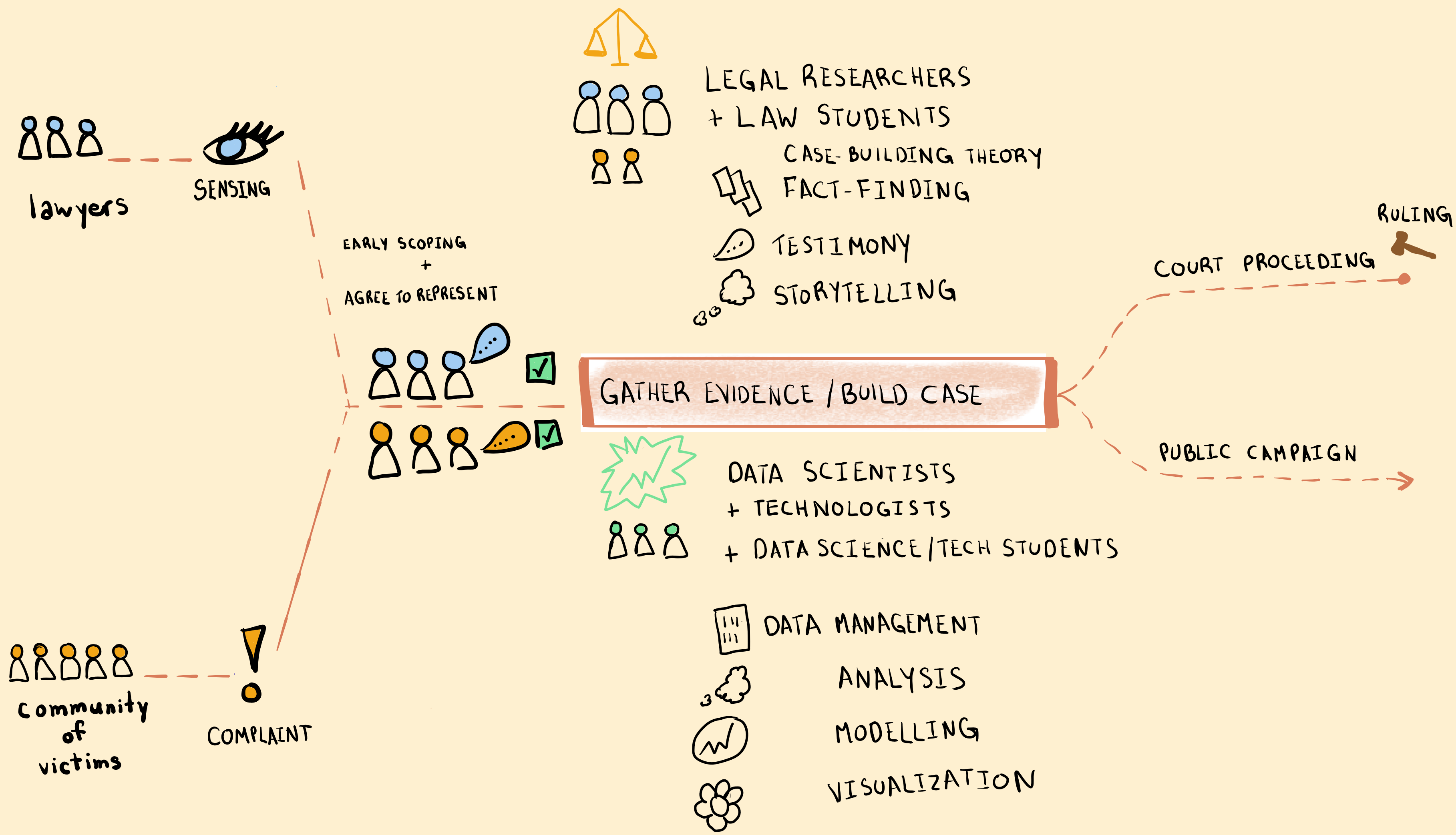
Informed by our stakeholder interviews and student focus groups, we identified a suite of service opportunities that the GRIL Clinic can provide to human rights organizations. These fall into three service categories that employ data science to support advocacy goals: (1) developing legal cases; (2) undertaking advanced data analysis and modeling to support policy and advocacy goals; and (3) using data visualization to create digital storytelling.[32] Through the practical experience afforded by these different lines of work, GRIL students will acquire relevant and valuable skills for an evolving job market.

Skills Development for Law Students	Skills Development for Tech Students	Project Outputs
• advice and counseling • case theory • context research • cross-disciplinary collaboration • data/technology literacy • ethics review • fact-finding • human rights literacy • legal research and analysis • interviewing • legal drafting • strategic planning	• cross-disciplinary collaboration • client communication • coding best practices • data visualization • data wrangling • ethics review • human rights literacy • interviewing • modeling • professional writing • strategic planning • version control	• amicus briefs • data reports • data visualizations • expert declarations • legal memoranda • methodology reports • legal pleadings • policy reports • short-form public explainers • white papers

GRIL projects entail complex processes and multidisciplinary roles. To clarify our workflows for everyone involved, we chose to take a journey mapping approach to demonstrate how different services will unfold.[33] A journey map visually represents the collaboration model for each service, outlining how GRIL students, partners, and clients will work together as they innovate technology for human rights advocacy. They show the touchpoints, and the various roles that the different actors play throughout the timeline of a project in a quick and easy-to-digest format.

Below we identify operational models and journey maps for each service, which will become prototypes-to-test throughout the next few semesters. We employ a similar suite of tools and methodologies across each service, but the client's central goal and priorities for deliverables (what we are driving toward), is different.[34]

Service #1: Case-Building



Service #1: Case-Building

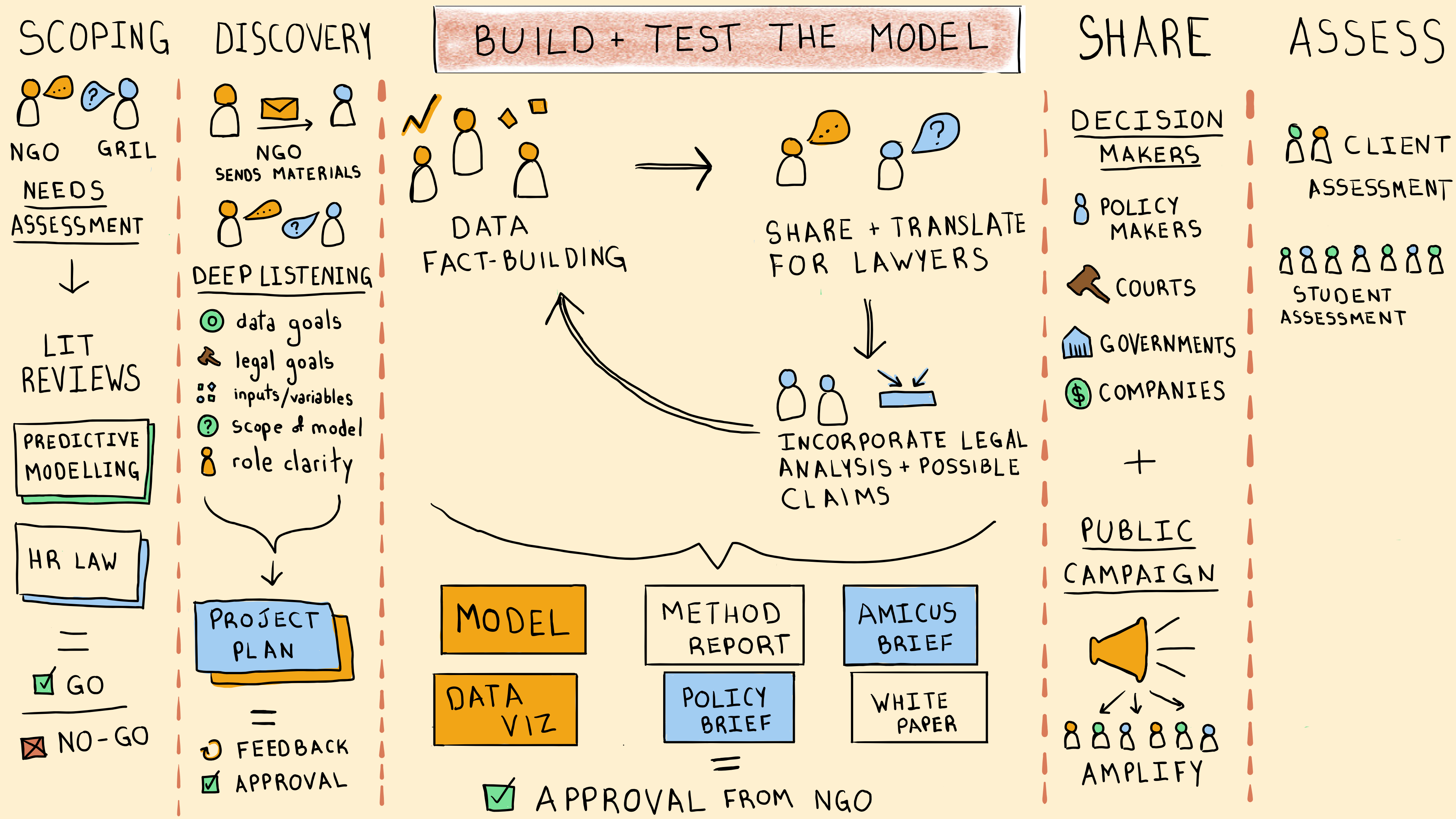
Case adjudication is a core form of human rights advocacy. Focusing on the power of new technologies and the methods of data analysis, GRIL will harvest large datasets for legally relevant information and integrate data into our clients' legal cases.

Developing facts and legal argumentation to support claims of human rights violations are essential elements of advocacy before courts, human rights mechanisms, and policymakers. New technologies and sophisticated methods of data science break new ground in fact gathering. Large datasets–developed through Open Source Investigations, published by governments, or available online–may contain valuable evidence of patterns, relationships, and insights that can complement traditional forms of evidence collection. Emerging technologies, like remote sensing, may also generate wholly new kinds of evidence. Using AI models like Large Language Models (LLMs) and multimodal large language models (MLLMs), GRIL can create a network map of perpetrators or entities linked to violations, identify linkages between types of harms to victims, and track changes in human rights conditions across space and time. Generating legally relevant and actionable insights requires productive dialogue between the fields of law and technology, which GRIL's multidisciplinary model fosters.

Directly responsive to client goals and desired end uses, teams of graduate students in information science and public policy students will create datasets (gather, clean, and standardize data), build models, and conduct analyses. In order for modeling to generate meaningful insights, teams of law students will conduct rigorous legal research to identify applicable definitions, standards, and relevant factual indicia. Fact research may include interviewing victims, witnesses, and experts, as well as scouring primary and secondary sources to gather background and context materials. Students will incorporate data analysis, modeling and findings from the technology team into case theory. These may be used to argue for new theories of violations or liability, as well as to draft persuasive legal arguments.

Through an iterative process, the multidisciplinary team creates bespoke data findings and legal analysis. These may be used to counsel and advise clients about potential claims, or be incorporated into legal pleadings, amicus briefs, presentations to decision makers, and short-form public-facing documents to raise awareness, support strategic litigation, or foster public participation in policy making.

Service #2: Data Analysis & Modeling



Service #2: Data Analysis & Modeling

GRIL will harness the power of statistical modeling to transform complex data into actionable insights for human rights advocacy. While data analysis might highlight trends or unusual patterns, modeling lets us formally quantify, validate, and measure uncertainty, providing a deeper understanding of relevant patterns. This modeling approach will enable GRIL to answer questions central to human rights work, such as identifying disparities between groups, imputing missing information, classifying cases, estimating the magnitude of violence, or uncovering hidden clusters of individuals/cases that share similar but non-obvious characteristics.

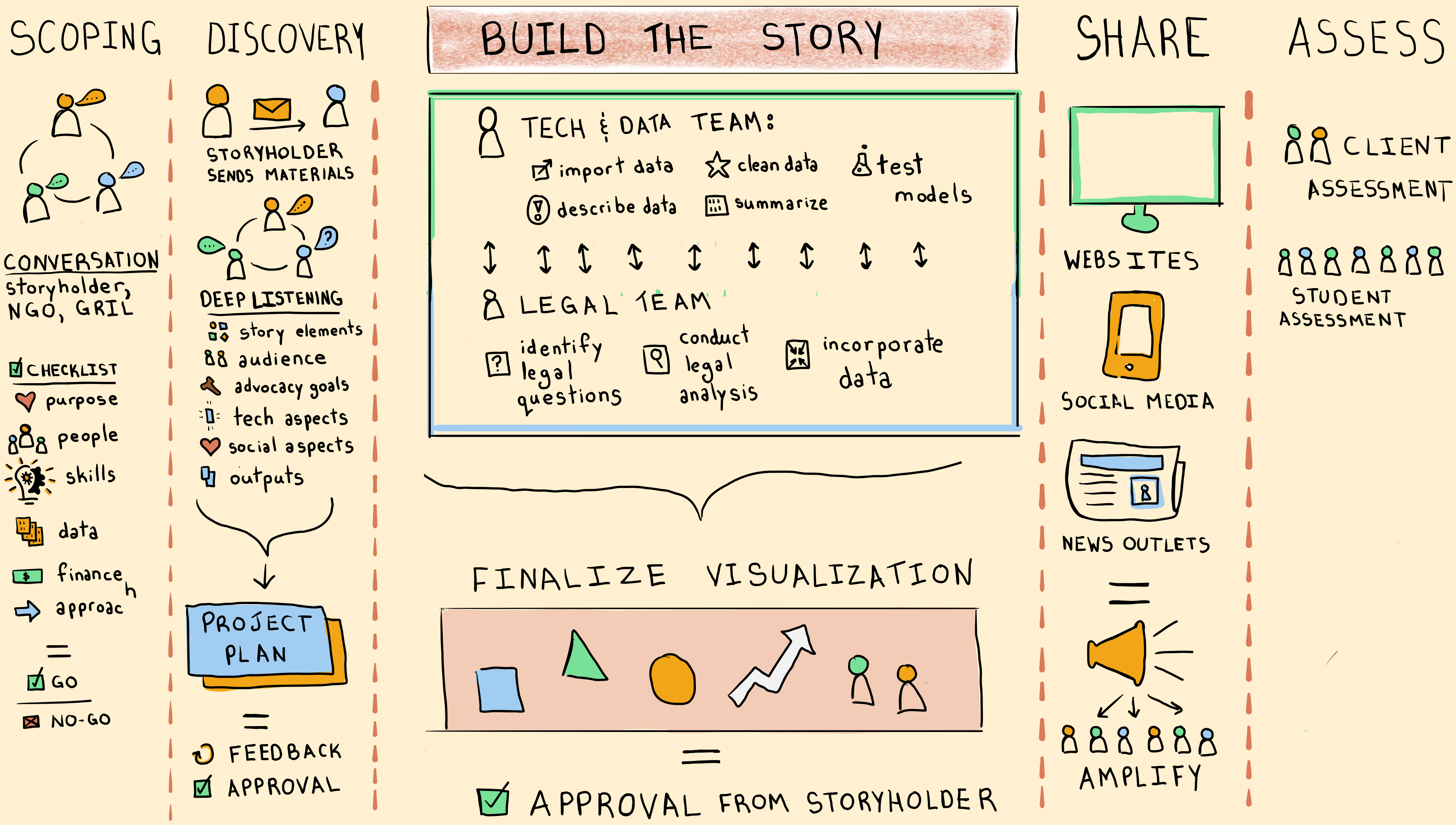
GRIL will also analyze unstructured data (e.g., text, images and audio). By using methods from Natural Language Processing (NLP), Large Language Models (LLMs), and Multimodal Large Language Models (MLLMs), we will extract meaningful insights from sources that were previously difficult to analyze at scale. These insights not only strengthen the quality of evidence presented in legal and policy settings but also help build compelling narratives that support advocacy goals.

Every modeling project at GRIL begins with a collaborative process, where graduate students from law and technology meet with the client to define a research question that is both legally significant and well-suited to data modeling. The team then works together to ensure that the modeling framework is aligned with the relevant legal context. Technology students focus on the development of the quantitative-based project and in making complex technical methods accessible, while law students rigorously evaluate the legal relevance and admissibility of the model's findings, ensuring that the results can stand up in court or policy debates.

Throughout the project, this multidisciplinary team collaborates closely to ensure that the findings are both technically robust and clearly communicated to diverse audiences, including judges, policymakers, and the general public. The end result is a set of data-driven insights and advocacy tools that are not only rigorous but also tailored for real-world impact.

Outputs may take the form of data visualizations, legal filings, models, and/or policy papers. In this way, GRIL's modeling approach turns raw data into persuasive, actionable evidence that advances human rights and justice. At the end of each cycle, we will administer evaluation and assessment tools to receive stakeholder feedback, inculcating the value of continuous learning.

Service #3: Digital Storytelling



Service #3: Digital Storytelling

Narrative tools powerfully convey the experience and perspectives of those directly impacted by human rights violations, foster empathy, and nurture justice work that puts vulnerable communities at the center. To service our clients in the prevailing communications ecosystem, GRIL will co-generate digital storytelling tools to reach online audiences.

Digital storytelling projects will enable GRIL's clients—human rights organizations, grassroots groups, policy-advocacy centers—to create and share narratives that are engaging, emotional, and accessible to a wide audience. Story elements may incorporate video clips, text, images, graphics, and music to humanize abstract human rights concepts like accountability, pattern and practice, remedy, and transparency. Incorporating data analytics can embed individual testimonies in a broader context of scope and trends, connecting audiences to the personal experience of large-scale violations. Outputs may include dashboards directing viewers to individual written testimonies, summary statistics, contextual analysis, multimedia web pages, and interactive websites that allow users to immerse themselves in the perspective and experiences of victims.

GRIL adopts a human rights-based approach to digital storytelling, which means we center those directly impacted by human rights violations in the story development, representation, voice, and message. It also means that our practices comport with the international right to privacy, minimizing risk to individuals and modeling good practices.

GRIL's multidisciplinary team will start by interviewing clients to define the communication goals, underlying legal elements, data contribution, and technical elements. Law students will conduct legal research that anchors the narrative in human rights, collect testimonies, curate public-facing legal and fact content, and prepare human rights studies that integrate data analytics. Graduate students with data analytics and data visualization expertise will define the data and technology needs, collect and analyze data to discern relevant trends and patterns, and contribute elements to the visualization. Storytelling is a deeply collaborative endeavor, and the technology and law students will be working shoulder-to-shoulder with clients to get the narratives right. The intended output is to tell stories that awaken compassion and motivation to drive social change, boosting our clients' strategic communications goals and amplifying and uplifting individuals and communities.

Digital storytelling outputs can be shared via websites, news outlets, social media, and other channels of communication. At the end of each cycle, we will administer evaluation and assessment tools to receive stakeholder feedback, inculcating the value of continuous learning.

CONCLUSION

Conclusion

We are establishing the Global Rights Innovation Lab Clinic at a critical juncture in the human rights field. Traditional advocacy methods are misaligned with today's global challenges of a shrinking number of State human rights champions and the weakening of international rule of law values. Stakeholder interviews revealed a clear and urgent need for an initiative like GRIL: human rights organizations face significant obstacles in integrating advanced data analysis and visualization tools into advocacy outputs. At the same time, both practitioners and students recognize the transformative potential of data science, machine learning, and digital storytelling to uncover new patterns of abuse, strengthen legal arguments, and communicate more powerfully with diverse audiences. GRIL is uniquely positioned to bridge these gaps by fostering multidisciplinary collaboration and capacity-building at the intersection of law, technology, and advocacy.

Based at Berkeley Law, GRIL's model is designed to provide a suite of services that leverages data analysis and visualization to strengthen human rights protections. Through case-building, digital storytelling, and advanced data modeling, GRIL supports human rights and civil society organizations in gathering, analyzing, and presenting evidence in ways that are rigorous and accessible. At the same time, GRIL is updating professional training to meet the digital age. We instill foundational knowledge about emerging technologies and build expertise to create new advocacy tools. Law students gain hands-on experience in core legal competencies, while technology students develop skills in applying complex data in advocacy contexts. By creating an immersive, collaborative, and multidisciplinary client-facing clinic, GRIL cultivates a pipeline of professionals adept at ethically applying technology to human rights work.

GRIL is an investment in the future of justice and advocacy. By leveraging the institutional strengths of UC Berkeley and cultivating partnerships across the university, GRIL stands as a site for experimentation, reflection, and impactful service. With its first cohort of law, data science, and public policy students to start in fall 2025, the clinic will continue to adapt and refine its model. We will share our reflections and lessons learned in the spirit of fostering dialogue with stakeholders and growing the field of community-centered human rights advocacy in the digital age.

Notes

[1] César Rodríguez-Garavito. "Human Rights 2030: Existential Challenges and a New Paradigm for the Human Rights Field." In The Struggle for Human Rights: Essays in Honour of Philip Alston, edited by Nehal Bhuta, Florian Hoffmann, Sarah Knuckey, Frédéric Mégret, and Margaret Satterthwaite, 328–347. Oxford: Oxford University Press, 2021.

[2] The Public Interest Technology University Network (PIT-UN). "About Us." Accessed March 25, 2025. https://pit-un.org/about-us/.

[3] Galit A. Sarfaty, *Can Big Data Revolutionize International Human Rights Law?*, University of Pennsylvania Journal of International Law 39, (2017): 73–100.

[4] While leading human rights researchers and journalists are integrating Open Source investigations and data visualization tools into their reporting, there is little use of predictive modeling or other advanced computational methods. See, e.g., Sam Dubberley, Alexa Koenig, and Daragh Murray, eds., *Digital Witness: Using Open Source Information for Human Rights Investigation, Documentation, and Accountability* (Oxford: Oxford University Press, 2020).

[5] Some organizations using Open Source Information include:

Amnesty International, "Citizen Evidence Lab," accessed May 13, 2025, https://citizenevidence.org;
Human Rights Watch, "Digital Investigations Lab," accessed May 13, 2025, https://www.hrw.org/topic/technology-and-rights/digital-investigations-lab;
Forensic Architecture, "Forensic Architecture", accessed May 13, 2025, https://forensic-architecture.org/;
Bellingcat, "Bellingcat", accessed May 13, 2025, https://www.bellingcat.com/;
SITU Research, "SITU", accessed May 13, 2025, https://situ.nyc/.

[6] Human Rights Data Analysis Group (HRDAG) is the leading organization that applies sophisticated data analysis and modeling to human rights work around the world. HRDAG's work has been used at truth commissions, international criminal tribunals, and by NGOs. See Human Rights Data Analysis Group, "About HRDAG," accessed May 13, 2025, https://hrdag.org/.

[7] Daragh Murray, Yvonne McDermott, and Alexa Koenig, "Mapping the Use of Open Source Research in UN Human Rights Investigations," *Journal of Human Rights Practice* 14, no. 2 (2022): 554–581.

[8] Ezio Manzini, *Design, When Everybody Designs: An Introduction to Design for Social Innovation*, Cambridge, MA: MIT Press, 2015.

[9] Sumon Biswas, Mohammad Wardat, and Hridesh Rajan, "The Art and Practice of Data Science Pipelines: A Comprehensive Study of Data Science Pipelines In Theory, In-The-Small, and In-The-Large," in *Proceedings of the 44th International Conference on Software Engineering* (ICSE '22) (New York: Association for Computing Machinery, 2022).

[10] Biswas, Wardat, and Rajan, "The Art and Practice of Data Science Pipelines."

[11] Biswas, Wardat, and Rajan, "The Art and Practice of Data Science Pipelines."

[12] Peter Joore, Guido Stompff, and Jeroen van den Eijnde, eds., *Applied Design Research: A Mosaic of 22 Examples, Experiences and Interpretations Focussing on Bridging the Gap between Practice and Academics* (Boca Raton, FL: CRC Press, 2022), https://doi.org/10.1201/9781003265924.

Notes

[13] Hoe Chin Goi and Wee-Liang Tan, "Design Thinking as a Means of Citizen Science for Social Innovation," Frontiers in Sociology 6 (2021): 629808, https://doi.org/10.3389/fsoc.2021.629808.

[14] Professor Margaret Hagan is a leading academic in the field of legal design. Based at Stanford d.school, her award-winning efforts apply design-thinking, human-centered design, and service design into legal processes, demystifying often opaque legal practices for general audiences, and improving legal practices by centering people's outcomes and wellbeing. See Margaret Hagan, "Margaret Hagan," accessed May 13, 2025, https://www.margarethagan.com/.

[15] Bryan Setser, "Leveraging the Innovation Ambition Matrix for Nonprofit Success." LinkedIn post, January 16, 2025. https://www.linkedin.com/pulse/leveraging-innovation-ambition-matrix-nonprofit-success-bryan-setser-vmhue.

[16] Bansi Nagji and Geoff Tuff, "Managing Your Innovation Portfolio," Harvard Business Review, May 2012. https://hbr.org/2012/05/managing-your-innovation-portfolio.

[17] For example, the consultancy group Deloitte has applied the matrix in the public sector and demonstrated how public agencies can categorize initiatives into core (incremental improvements), adjacent (expansion into new services or populations), and transformational (system-wide change) innovations, helping leaders balance risk and drive measurable outcomes. Holden, A et al. "Developing innovation portfolios for the public sector: Portfolios for public good." Deloitte Insights. August 2018. https://www.deloitte.com/us/en/insights/industry/government-public-sector-services/innovation-portfolios-public-sector-organizations.html.

[18] Rachael Clay, "Where's the Ambition to Innovate?" Ethicore, November 2017. https://www.ethicore.com/wheres-the-ambition-to-innovate/.

[19] Betsy A. Miller, "The Legal Profession's Struggle to Leverage Stability and Change," Harvard Negotiation Law Review 27 (2022): 1–30. https://journals.law.harvard.edu/hnlr/wp-content/uploads/sites/91/HNR102_crop-3.pdf.

[20] Patricia G. Beach, and James Joyce. "Escape from Flatland: Using Polarity Management to Coach Organizational Leaders from a Higher Perspective." The International Journal of Coaching in Organizations 7, no. 2 (2009): 64–83.

[21] Barry Johnson, *Polarity Management: Identifying and Managing Unsolvable Problems* (Human Resource Development Press, 1992).

[22] Polarity Practice Tools, "Polarity Thinking," accessed May 15, 2025. https://polaritypracticetools.com/.

[23] William J. Benet, "Managing the Polarities of Democracy: A Theoretical Framework for Positive Social Change," Journal of Social Change 5, no. 1 (2013): 26–39, https://scholarworks.waldenu.edu/jsc/vol5/iss1/3/.

[24] See **Appendix 1** to read the interview questions.

[25] See **Appendix 2** to read the focus group questions.

[26] Focus groups were facilitated by non-faculty outside the clinic. The Design Strategist recruited participants through relevant listservs and graduate courses for UC Berkeley students. These targeted graduate students interested in Artificial Intelligence, data science and technology, human rights, and international law.

Notes

[27] See **Appendix 3** to see the Theme distribution.

[28] GitHub copilot is an AI tool that suggests code. See: GitHub. "GitHub Copilot." Last modified January 26, 2024. https://github.com/features/copilot.

[29] Focus groups were facilitated by non-faculty outside the clinic.

[30] See **Conceptual Foundations** chapter.

[31] IDEO.org, *The Field Guide to Human-Centered Design*, 1st ed. (San Francisco: IDEO.org, 2015).

[32] These service offerings are not exclusive. We anticipate providing additional forms of support to clients. For example, one of our findings is that human rights organizations want analyses of complex issues they confront in using new technologies. A university clinic is seen as a credible authority to conduct such research. GRIL may open a line of work in this area after building its institutional experience and track record delivering high-quality advocacy tools integrating data science and legal analyses.

[33] Margaret Hagan, "A Service Design Approach to the Legal System: Mapping User Journeys," Open Law Lab, January 20, 2017. https://www.openlawlab.com/2017/01/20/a-service-design-approach-to-the-legal-system-mapping-user-journeys/

[34] These heuristics capture the differentiation in skills and roles between graduate students specializing in data science and law students. Journeymaps also convey the integration of disciplines, showing that the payoff of the GRIL clinical model comes from generating work product that is greater than the sum of its parts. These process depictions also are helpful tools to guide clients and students through complex, multidisciplinary work.

Appendix A. Research Questions: Stakeholder Interviews

Personal background
1. Could you please introduce yourself, share your position in the organization, and what you do?

Technology and human rights
2. Has the way in which your organization used technology for human rights advocacy/research evolved over time? If so, please explain.
Successful examples? Challenges?

3. What specific technology tools or methods are you currently using and why?
Are there specific technologies or approaches you believe could transform advocacy practice in human rights?

Collaboration opportunities
4. Do you collaborate with other organizations? If so, what is usually the role of each?

5. If you had additional resources or support, how would you expand your current human rights technological initiatives?

6. What do you perceive as the main obstacles or roadblocks to implementing your technological vision in human rights work?

7. Given our interest in applying new technologies and data approaches to advocacy, what contribution do you think a university-based clinic could make in this area?

Stakeholder mapping
8. Based on our research focus, who else in this space would you recommend we reach out to? Organizations or individuals that we should be aware of?

Closure
10. Is there anything else you'd like to share about the intersection of technology and human rights that we haven't covered?

11. Do you have any questions for us?

Appendix B. Research Questions: Student Focus Groups

Part 1. General Clinic Goals for Students
Clinics based on law schools are geared toward providing students with practical experiences within the legal field. Clinics can provide these experiences within specific niches of the law, and can also provide experiences where the law bridges into other fields of practice like data science, data analysis, other kinds of digital technology, as well as communications, and community work.

Question 1: What type of practical experience do you hope to get in your clinical experience? What type of organizations do you imagine working with? What type of relationships do you want to develop? What type of skills do you want to learn?

Instructions:
Step 1: Write your answer down for yourself (5-10 minutes)
Step 2: Individually share back in a round (30 minutes)

Part 2. Feedback on the GRIL Clinic Idea
The Global Rights Innovation Lab Clinic (GRIL) aims to bridge the fields of human rights and digital technology. The Clinic's mission is to collaborate with human rights advocates, technologists, data analysts, and other relevant experts to transform the use of cutting-edge tools like data analysis, data science, data visualization, digital storytelling, and AI to reimagine human rights advocacy tools. For example, using machine learning of open source data to identify patterns of human rights violations. Or creating digital storytelling tools about human rights cases and campaigns to generate public support, etc. Our focus is not to regulate how technology is used to minimize its negative impacts on human rights. We will be using technology in a way that is human rights compliant!

Question 2: What do you find compelling about this clinical idea?
What do you find less compelling? Would you amend or edit the idea in any way to make it more compelling to you? This could include the partners, the way of working, etc.

Instructions:
Step 1: Write your answer down for yourself (5 minutes)
Step 2: Group discussion (20 minutes)

Appendix C. Quantitative Analysis Overview: Stakeholder Interviews

Interview Participants
We interviewed:

- Nineteen (19) Technology & Human Rights Organizations
- Three (3) Academics

Themes
Every interview was transcribed and coded for the following themes:

- **Challenges** (22.4% of coded observations)
- **Ideas for GRIL** (15% of coded observations)
- **Partners** (11% of coded observations)
- **Success Factors** (10.1% of coded observations)
- **Software/Infrastructure** (8.0% of coded observations)
- **Future Uses of Technology** (5.9% of coded observations)
- **Data Pipeline - Documentation** (7.7% of coded observations)
- **Data Pipeline - Storytelling** (7.7% of coded observations)
- **Data Pipeline - Analysis** (6.9% of coded observations)
- **Data Pipeline - Modeling** (3.7% of coded observations)