Catherine Han

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🌐 catherinehan.github.io

PhD candidate in security and human-computer interaction with a focus on social computing. Passionate about mitigating online abuse via data-driven solutions. Seeking a full-time industry role where I can leverage my expertise in cybersecurity and Trust & Safety to design and build scalable systems that protect users and platform integrity.

EDUCATION

Exp. 2025   **Ph.D. in Computer Science**, *Stanford University*, advised by Prof. *Zakir Durumeric*
Interests: security, human-computer interaction, abuse, trust & safety

Exp. 2025   **M.S. in Computer Science**, *Stanford University*

2020   **B.A. in Computer Science**, *University of California, Berkeley*

PROFESSIONAL EXPERIENCE

2020-Present   **Research Assistant**, *Stanford University*, Computer Science Department
- Investigated online threats (misinformation, harassment, generative AI abuse) & actors to inform empirical mitigations.
- Led cross-functional collaborations across computer science, communication, & law, publishing peer-reviewed work.

Present, 2017-2020   **Teaching Assistant**, *Stanford University* 🌲 *and UC Berkeley* 🐾, Computer Science Departments
- 🌲 **Grad Comp. & Network Security** (Present): mentored and managed 9 teams across 25 students to propose and execute novel security research positioned in existing canonical work.
- 🐾 **[Head TA] Computer Security** (2020): managed 17 TAs while spearheaded transition to online learning for a class of 500 students; created course material and exams; taught conceptual and debugging skills.
- 🐾 **Computer Architecture** (2019) 1K students; **Data Structures** (2018) 1.5K; **Intro CS** (2017) 1.8K: translated complex technical concepts to nonexperts to learn and master the material

2019   **Software Engineering Intern**, *Salesforce*, Salesforce Zero
- Implemented a telemetry pipeline to store service usage metrics into a database and visualized on NewRelic and Prometheus dashboards, which was integrated into production services.

SELECT PROJECTS & PAPERS

2024   **PressProtect: a protective tool for journalists**, *published in* **CSCW** 🔗, ★ Best Paper Honorable Mention
- Designed and prototyped a protective interface for Twitter/X for journalists to control when and how they engage with harassment on social media, based on need-finding interviews and evaluated via user testing with 8 journalists.
- Scaffolded engagement with UI controls based on content "toxicity" and "relevance" to journalist's work using GPT-3.5 and Google's Perspective API, performing LLM/model evaluation for thresholding.

2023   **"Hate raids" on Twitch**, *published in* **CSCW** 🔗, 🏆 Best Paper Award
- Characterized "hate raids" on Twitch, a novel form of scaled harassment campaigns, and stakeholder responses using over 244M chat messages from 10K channels and interviews with 9 members of targeted communities.
- Proposed data-driven suggestions for platform governance, addressing how stakeholders (platforms, moderators, and external developers) can collaborate to better protect vulnerable communities from existing and future attacks.

2022   **Web infrastructure of misinformation sites**, *published in* **ICWSM** 🔗
- Identified web infrastructure (e.g., CDN, ad, DDoS protection) providers serving 440 misinformation sites, using large-scale web crawling through browser automation and DOM analysis.
- Results cited in *TIME* to scrutinize Cloudflare use by harassment forum Kiwi Farms, after which it was deplatformed.

2020   **Consumer protection & privacy in free vs. paid mobile apps**, *published in* **PoPETS** 🔗
- Contrasted user expectations for *better* privacy from paid versions of apps with their indiscriminate data collection behaviors in practice via at-scale traffic analysis of 6K apps and a 1,000-participant survey.
- Communicated findings to the Federal Trade Commission and spoke on an expert panel at PrivacyCon '19.

AWARDS

2024   ★ **Best Paper Honorable Mention**, *ACM Hum.-Comput. Interact. (CSCW)*, 4% of papers

2023   🏆 **Best Paper Award**, *ACM Hum.-Comput. Interact. (CSCW)*, 1% of papers

2021   **Graduate Research Fellowship Program Fellow**, *National Science Foundation*, 15% of applicants

2020   **School of Engineering Fellow**, *Stanford University*

2020   **Outstanding Undergraduate Student Instructor Award**, *UC Berkeley*, <10% of instructors

TECHNICAL SKILLS

Methods   Quantitative & qualitative analysis, surveys, interviews, data mining/scraping, statistical testing & modeling

Tools   Python, Java, C, SQL, JavaScript, Bash, Git