

Shambhavi Mittal

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RESEARCH INTERESTS

Security and Privacy, Internet Measurement, Platform Auditing, AI Safety; I measure and audit websites, internet infrastructure, and generative AI systems to detect and mitigate privacy risks (e.g., covert tracking and data flows) and safety risks (e.g., misuse of AI systems to harm others). I use various empirical and analytical methods, including web crawling, traffic analysis, internet-wide scanning, and systematic audits of complex systems. My aim is to contribute to privacy-preserving tools, develop generalizable techniques, and provide evidence to inform policies, helping make the web ecosystem and AI systems more transparent, privacy-compliant, and accountable to users, especially the most vulnerable.

EDUCATION

Northeastern University

Ph.D. in Computer Science, Khoury College of Computer Sciences

Boston, MA, USA

Sep 2026 – May 2031 (Expected)

University of California, San Diego

Master of Science in Computer Science; GPA: 3.97/4.00

San Diego, CA, USA

Sep 2025 – Jun 2026

- *Masters Award for Excellence in Research (Honorable Mention).*

University of California, San Diego

Bachelor of Science in Computer Science; GPA: 4.00/4.00

San Diego, CA, USA

Sep 2022 – Jun 2025

- *Summa Cum Laude, given to the top 2% of the graduating class.*

INTERNSHIPS AND WORK EXPERIENCE

• Northeastern University, Boston

Sep 2026 – present

Graduate Research Assistant | Advised by: [Prof. Christo Wilson](#)

Detecting privacy and safety risks in online technologies, using empirical methods to measure how personal data is collected across different parts of the web and auditing generative AI systems to illuminate how they behave in sensitive situations and the potential harms they could pose to vulnerable users. Working towards making the online and AI ecosystem more secure, safer and privacy-compliant for people who use them.

• University of California, San Diego

Sep 2023 – Jun 2026

- *Research Assistant | Advised by: [Prof. Alex Snoeren](#)*

Examined how personal information is gathered and transmitted online, focusing on understanding security, privacy and safety across the internet, detecting hidden forms of surveillance, identifying unusual data flows globally, and developing privacy-preserving tools. Used large-scale web crawling, network measurements and analysis, and built security-first tools to evaluate online data practices and inform ways to strengthen user privacy and security.

- *Student Researcher for [Early Research Scholars Program \(ERSP\)](#) | Advised by: [Prof. Alex Snoeren](#)*

Analyzed internet traffic of 2000 government websites using IP geolocation, ping tests and latency comparisons to identify country-in-the-middle cases where data crossed national border despite in-country routes.

• Software Development Engineering Intern at [Exaforce](#) (Agentic SOC Platform)

June 2025 – Sep 2025

Built and tested E2E automated SaaS database and graphics debugger for product pipeline, integrating agentic AI (Claude Code Opus 3). Triggered from Slack through APIs and AWS lambda function to launch a Github workflow, which dynamically deployed MCP servers (Jupyter and Superset). Reduced debugging time by 84.3%.

• Machine Learning Intern at [Brightside Health](#) with [Cornell](#) and [UCLA](#)

May 2024 – May 2025

Built a knowledge graph with 97.4% coverage by extracting nodes from research papers using LLMs, integrating results into a queryable database, and adding visualizations to identify treatments for depression and anxiety more efficiently.

PUBLICATIONS

- **Shambhavi Mittal**, Alisha Ukani, A.C. Snoeren. 2025. *Hide and SST: Detecting and Analyzing Server-Side Tracking Across the Web [Poster]*. In Privacy Enhancing Technologies Symposium 2025 (PETS 2025). [[Poster](#)]
- Alisha Ukani, Katherine Izhikevich, **Shambhavi Mittal**, Manan Patel, Samvrit Srinath, Kristy Ly, KC Claffy, A.C. Snoeren. 2025. *Country-in-the-Middle: Measuring Paths between People and their Governments.*[[Pre-Print](#), [Poster](#)]

AWARDS AND ACHIEVEMENTS

- Recognized as a Young Researcher (1 of 100 globally) at the 13th Heidelberg Laureate Forum 2026
- Masters Award for Excellence in Research Honorable Mention (1 of 2 department-wide recipients) 2026
- Provost's Honors in every quarter of undergrad for academic excellence 2022, 2023, 2024, 2025
- PETS Stipend Award to attend PETS 2025 (USD 1,000) 2025
- AI/ML Fellowship 2024 from Break Through Tech, organised by Cornell Tech and UCLA (USD 2000) 2024
- Awarded Gold Medal for academic excellence for 7 consecutive years at DPS R.K. Puram 2021
- Awarded Gold Medal for academic excellence for 6 consecutive years at DPS Noida 2020

TEACHING

- **CSE 132A: Database System Principles, University of California - San Diego** Apr 2026 – Jun 2026
Teaching Assistant to 192 students | Developed assignments and grading rubrics, led discussions and held weekly office hour | Graded assignments and exams.
- **CSE 167: Computer Graphics, University of California - San Diego** Sep 2024 – Mar 2025
Tutor for 313 students | Conducted weekly office hours and developed grading rubrics | Graded assignments and exams.
- **Outreach Member, Eta Kappa Nu** Sep 2023 – Jun 2024
Taught [web development and introductory programming](#) to K-12 students for Engineering Honor Society.

PROJECTS

- **Noted** [\[WebApp\]](#) [\[GitHub\]](#) Mar 2024 – Jun 2024
Developed Noted, journal app for software devs following Software Development Life Cycle with 100% keyboard accessibility, comprehensive documentation, unit and E2E testing, automated CI/CD and calendar-based goal tracking.
- **Taxi Fares Prediction Model** [\[GitHub\]](#) Sep 2026 – Dec 2024
Spearheaded design and fine-tuning of neural network to predict NYC Taxi fares and tips with a RMSE of 0.377, 30x better than baseline models by carefully choosing features and processing data for CSE 158: Recommender Systems.
- **CAD Engineer** at [Center for Visual Computing](#) Feb 2024 – Dec 2024
Advised by [Prof. Ravi Ramamoorthi](#), Engineered a 3D device to reconstruct scene geometry to minimize specular reflections by 80% in Fusion 360.

TALKS AND POSTER PRESENTATIONS

- Presented “Hide and SST: Detecting and Analyzing Server-Side Tracking Across the Web” at Privacy Enhancing Technologies Symposium (PETS'25) 2025
- Selected to present “Country in the Middle: Measuring Paths between People and their Government” at ERSP National Conference. 2024
- Presented “Country in the Middle: Measuring Paths between People and their Government” at and nominated to attend CNS Research Review. 2024
- Presented “Country in the Middle: Measuring Paths between People and their Government” at Undergraduate Engineering Research Symposium. 2024

SERVICE AND LEADERSHIP

- **Vice President Finance, GradWIC at UCSD** 2025, 2026
Managed finances for Graduate Women in Computing.
- **Beginner's Programming Competition Chair, WIC at UCSD** 2024, 2025
Organized a competition for over 240 beginner programmers and led a team of 12 members to create problems around themes for Women in Computing.
- **Member, DEI Committee** 2023, 2024
Worked towards harboring diversity, equity, and Inclusion within Computing at UCSD
- **EDGE Program Mentor, Society of Women Engineers** 2022, 2023, 2024
Encouraged 150+ high school girls and non-binary students to explore engineering careers and helped 10 students complete college applications.
- **Mentorship Director, Computer Science and Engineering Society** 2023, 2024
Led 7 people to recruit mentees and mentors.
- **Founder and Student Mentor, [Stem Made Fun \(NGO\)](#)** 2020, 2021, 2022