Naman Gupta

n@cs.wisc.edu | naman.github.io

Research Interests: I critically examine digital safety through interdisciplinary critical and decolonial lenses to examine technology-facilitated gender-based violence. Specifically, I analyze the barriers faced by historically marginalized communities who face gender-based violence to seek support, heal, and build resilience.

Education

University of Wisconsin-Madison, USA Aug, 2021 - Present
PhD in **Computer & Information Sciences**
Minor in Psychology, Gender & Women Studies, Law, and Education Policy

Indraprastha Institute of Information Technology, Delhi, India Aug 2013 - April 2017
Bachelor of Technology in **Computer Science & Engineering**

Publications

*Equal contribution.

1. Sophie Stephenson, **Naman Gupta**, Akhil Polamarasetty, Kyle Huang, David Youssef, Kayleigh Cowan, and Rahul Chatterjee, "[redacted] Law and Technology-Facilitated Abuse" **Under Submission CSCW 2025**.
2. **Naman Gupta**, Kate Walsh, Sanchari Das, and Rahul Chatterjee, "Barriers and Challenges Faced by Survivors of Technology-Facilitated Abuse in Seeking Social Support". **USENIX Security 2024**.
3. **Naman Gupta**, Sanchari Das, Kate Walsh, and Rahul Chatterjee, "A Critical Analysis of the Prevalence of Technology-facilitated Abuse in US College Students". Late Breaking Work at **CHI 2024**.
4. Rose Ceccio*, **Naman Gupta***, Majed Almansoori*, and Rahul Chatterjee, "Analyzing Patterns and Behavior of Users When Detecting and Preventing Tech-enabled Stalking". Workshop on Usable Security and Privacy (USEC) **NDSS 2023**.
5. Mohannad Alhanahnah, Philipp Schubert, **Naman Gupta**, Thomas Reps, Somesh Jha, and Eric Bodden, "[redacted] Automatic boundary detection in programs". **Under submission at ICSE 2023**.
6. Zhe Tao, Aseem Rastogi, **Naman Gupta**, Kapil Vaswani, and Aditya V. Thakur, "DICE⋆: A Formally Verified Implementation of DICE Measured Boot". **USENIX Security 2021**.
7. **Naman Gupta***, Srishti Sengupta* and Vinayak Naik. "A firewall for internet of things.". **COMSNETS, 2017**. *Undergraduate Thesis.*
8. **Naman Gupta***, Anmol Singh*, and Sachit Butail. "The effect of instructional priming on postural responses to virtual crowds.". Workshop on Virtual Humans and Crowds in Immersive Environments (VHCIE) **IEEEVR, 2017**.

Research Experience

UW Madison, USA August 2021 - Present
PhD Student in MadS&P, Advised by Rahul Chatterjee

- Research on supporting survivors of Intimate Partner Violence.
- Outreach Coordinator and consultant for Madison Tech Clinic.

Microsoft Research (MSR), India January 2020 - July 2021
Research Fellow, Confidential Computing Group, Advised by Kapil Vaswani

- Implemented a toolchain that runs on commodity hardware to evaluate the formally verified secure boot firmware based on DICE*.
- Performed security evaluation and testing on a Trusted Execution Environment (TEE) architecture on GPUs to find concurrency bugs in the TEE API.

- Implemented an architecture that supports issuance of COVID-19 health certificates & travel permits using Microsoft CCF.

Technology for Emerging Markets Group (Project Blendnet)

- Blendnet is an offline hyper-local video streaming solution to improve financial inclusion for the low-income population of India.
- Designed to a toolchain for provisioning and configuring the Azure infrastructure.
- Performed preliminary investigation in optimizing the WiFi network for throughput and latency.

IIIT Delhi, India 2013 - 2017
Undergraduate Thesis, Advised by Vinayak Naik

Prototype to detects security attacks in a home network of IoT devices by intercepting network packets.

VR for multi-agent systems with Sachit Butail
Examined the effect of knowledge priming on the participants by capturing their posture. A low-cost VR framework proved to be effective in studying behavioral contagion to understand human behavior in a variety of crowd scenarios.

Service

- **Associate Chair** for CSCW'25
- **External Reviewer** for CHI LBW'24 & CSCW'24
- **Poster Committee** for SOUPS'24 & IEEE S&P'24 (Oakland)
- **Organizer** for Queer in Security & Privacy NDSS 2023

Teaching and Advising

- **Best runners-up talk at CS Research Symposium** UW-Madison
- **Teaching Assistant (UW-Madison)** Capstone Projects (150+) x2, AI (150+) & Programming-III (800+)
- **Mentor (UW-Madison)** Mentoring 5 incoming CS International Graduate Students
- **Teaching Assistant (IIIT-Delhi & NPTEL)** Mobile Computing (200+)
- **Student-Instructor** DSA and System Programming for incoming master's students (50+)
- **Lead, Mentor Program** Paired 200 freshmen with senior students for independent projects
- **Administrator** Software Development Club (conducted several **hackathons**)
- **Talks (sophomore level, 200+)** Virtualization, Security, Git, node.js, MVC frameworks
- **Mentor** Rails Girls Summer of Code
- **Organising Team** 1st Blockchain Summit in India
- **Judge** Google's Code to Learn Contest 2016

Industry Experience

Grab, India | Singapore August 2018 - December 2019
DevSecOps Engineer

- Drove the defensive security initiatives by enforcing hardening policies on the payment infrastructure.
- Evaluated the Docker container security landscape - authorization, seccomp filters, mTLS, and network security groups using SPIFFE.
- Implemented an in-house authentication & authorization workflow for vendor-agnostic Kubernetes with Azure AAD, vulnerability patching, and behavioral monitoring of in-container processes.
- Designed a secret sharing policy in collaboration with the Security Assurance team to vet the security risks involving protocols for third-party vendor secret exchanges.
- Hosted Grab's Security Awareness **CTF with cryptography** challenges.

Media.net (Directi Group), India June 2017 - August 2018
Site Reliability Engineer

- Taught incoming hires (30+) on various topics including systems security, git, virtualization, python, and web framework. Hosted a **systems focused CTF**.
- Migrated a latency-sensitive Java application to a stateless micro-service architecture with monitoring, log collection, and network ingress rules.
- Designed pipeline for a real-time ad-serving platform - a blue-green auto-scaling pipeline (weekly traffic increase of 50%) with 80% reduction in hosting cost and 35% increase in performance.
- Built an automated ticketing system for accountable reporting of infrastructure vulnerabilities.

Intern, Elucidata, India March 2016 - May 2016

- Worked on ElMaven; an data processing engine for large-scale metabolomic experiments enabling faster drug discovery in cancer research.
- The work included optimizing the build system of a large C++ codebase, parallelizing classification algorithms, and solving memory leaks.
- The work is now open-source and the methodology has been published.

Intern, Placement Cell, IIIT-Delhi, India May 2014 - June 2014

Developed an in-house open-source app for an easy-to-use hiring management experience. The aim was to replace a third-party vendor to safeguard hiring statistics. Gained first-hand experience involving production-grade full-stack development.