Jyotirmay Chauhan

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EDUCATION

University of Illinois Chicago 2023 – Current
Doctor of Philosophy, Computer Science (GPA: 3.5)

Colgate University 2019 – 2023
Bachelor of Arts, Computer Science (GPA: 3.7)

TECHNICAL SKILLS

- **Languages**: Python, Javscript, C, ObjC, Java, R, Kotlin LaTeX
- Tools: Docker, Wireshark, Burp Suite, mitmproxy, MATLAB, Android Studio, SQL, Nginx
- Libraries: pandas, numpy, scipy, json, keras, pytorch, Jupyter, networkx, Tesseract, subprocess, Git, Unix

AWARDS

- Laura Sanchis Award for Excellence in Research (2023)
- Dean's Award with Distinction (2020, 2021)
- Funded by Holden Endowment Fund (2020, 2021)
- National Talent Search (NTSE) annual scholarship from Government of India (2016)

TEACHING EXPERIENCE

- CS468 Network Security TA (2024,2025)
- CS252 Data structures TA (2023)
- COSC208 Introduction to Computer Networks(2022)

PAPERS & POSTERS

- ***J.Chauhan*** , K. Solomos, M. Ali, J. Polakis *Exploring Privacy Leakage and Data Disclosure Violations in the MacOS Application Ecosystem* **(under review)**
- ***J.Chauhan*** , A.Gember-Jacobson, *Summarizing Network Configuration Patterns* Network Verification Workshop **(Usenix NSDI 2023)**
- ***J.Chauhan*** , D.Lee, E.Yu, A.Gember-Jacobson, *Detecting Configuration Errors Via Pattern Mining* Network Verification Workshop **(IEEE INCP NetVerify 2021)**
- (Poster) S.Alam, ***J.Chauhan***, Z.Liu, A.Gember-Jacobson, *What ITS got wrong: Learning from Network History*, Colgate Summer Research Poster Session, 2022.
- (Poster) ***J.Chauhan*** , D.Lee , E.Yu, A.Gember-Jacobson, *Detecting Network Errors: Router Configuration Mining*, Colgate Summer Research Poster Session, 2021.
- (Poster) ***J.Chauhan*** , X.Jiang, T.Potter, A.Gember-Jacobson, *Practical bug detection in software implementations of routing protocols*, Colgate Summer Research Poster Session, 2020.

ACADEMIC RESEARCH

Detect personal data collection by MacOS apps June 2024 – Dec 2025

- Developed app analysis pipeline using binary Reverse Engineering and runtime memory modication via Frida & lldb to tract user identifiers.
- Large scale study of over 1500 MacOS applications. $\approx$ 70% exfiltrate Location data, Name, unique Device IDs without permission. **(Slides)**

Origin spoofing in FIDO Webauthn Jan 2024 – June 2024

- Conducted comprehensive security anaysis of YubiKey based authentication in cross platform Electron Apps. Identified crucial origin spoofing attack leading to key compromise under certain conditions. **(Slides)**

Pattern Mining in Networks May 2021 – May 2023

- Improved 200 (x) times open-source Contrast Set Learning algorithm STUCCO for parsing CISCO and ARUBA config files. Created explainability heuristic for misconfiguration rule sets. **(Slides)**

Protocol Verification May 2020 – August 2020

- Orchestrated Docker containers running OSPF, BGP, and FR routing protocols on AWS alongside automated packet capture and regex-based parsing.

Projects

Asset Price Prediction ML model

- Developed OSINT-driven price prediction LSTM model in pytorch; 93% validation accuracy for month-end predictions. Improved robustness to feature removal (ask, bid prices) achieving 91% accuracy.

Secure File Transfer Protocol

- Built multithreaded AES-GCM encrypted upload and download clients secure against eavesdropping, modification, deletion, and replay using pyCryptodome, socket libraries.