

# Jyotirmay Chauhan

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CONTACT	jchauhn.github.io	linkedin.com/in/jyotirmay-chauhan/
EDUCATION	<b>University of Illinois Chicago</b> Doctor of Philosophy, Computer Science (GPA: 3.5)	2023 – Current
	<b>Colgate University</b> Bachelor of Arts, Computer Science (GPA: 3.7)	2019 – 2023
TECHNICAL SKILLS	<ul style="list-style-type: none"><li>• <b>Languages:</b> Python, Javascript, C, ObjC, Java, R, Kotlin <math>\text{\LaTeX}</math></li><li>• <b>Tools:</b> Docker, Wireshark, Burp Suite, mitmproxy, MATLAB, Android Studio, SQL, Nginx</li><li>• <b>Libraries:</b> pandas, numpy, scipy, json, keras, pytorch, Jupyter, networkx, Tesseract, subprocess, Git, Unix</li></ul>	
AWARDS	<ul style="list-style-type: none"><li>• Laura Sanchis Award for Excellence in Research (2023)</li><li>• Dean's Award with Distinction (2020, 2021)</li><li>• Funded by Holden Endowment Fund (2020, 2021)</li><li>• National Talent Search (NTSE) annual scholarship from Government of India (2016)</li></ul>	
TEACHING EXPERIENCE	<ul style="list-style-type: none"><li>• CS468 Network Security TA (2024,2025)</li><li>• CS252 Data structures TA (2023)</li><li>• COSC208 Introduction to Computer Networks(2022)</li></ul>	
PAPERS & POSTERS	<ul style="list-style-type: none"><li>• <b>J. Chauhan</b> , K. Solomos, M. Ali, J. Polakis <i>Exploring Privacy Leakage and Data Disclosure Violations in the MacOS Application Ecosystem</i> (<b>under review</b>)</li><li>• <b>J. Chauhan</b> , A.Gember-Jacobson, <i>Summarizing Network Configuration Patterns</i> Network Verification Workshop (<b>Usenix NSDI 2023</b>)</li><li>• <b>J. Chauhan</b> , D.Lee, E.Yu, A.Gember-Jacobson, <i>Detecting Configuration Errors Via Pattern Mining</i> Network Verification Workshop (<b>IEEE INCP NetVerify 2021</b>)</li><li>• (Poster) S.Alam, <b>J. Chauhan</b>, Z.Liu, A.Gember-Jacobson, <i>What ITS got wrong: Learning from Network History</i>, Colgate Summer Research Poster Session, 2022.</li><li>• (Poster) <b>J. Chauhan</b> , D.Lee , E.Yu, A.Gember-Jacobson, <i>Detecting Network Errors: Router Configuration Mining</i>, Colgate Summer Research Poster Session, 2021.</li><li>• (Poster) <b>J. Chauhan</b> , X.Jiang, T.Potter, A.Gember-Jacobson, <i>Practical bug detection in software implementations of routing protocols</i>, Colgate Summer Research Poster Session, 2020.</li></ul>	
ACADEMIC RESEARCH	<b>Detect personal data collection by MacOS apps</b>	June 2024 – Dec 2025
	<ul style="list-style-type: none"><li>• Developed app analysis pipeline using binary Reverse Engineering and runtime memory modification via Frida &amp; lldb to tract user identifiers.</li><li>• Large scale study of over 1500 MacOS applications. <math>\approx 70\%</math> exfiltrate Location data, Name, unique Device IDs without permission. (<a href="#">link</a>)</li></ul>	
	<b>Stealing secure tokens from hardware keys</b>	Jan 2024 – June 2024
	<ul style="list-style-type: none"><li>• 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. (<a href="#">link</a>)</li></ul>	

## **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. ([link](#))

## **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.