

# Parth Mittal

Pursuing BS in Computer Science — Cornell University

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## Experience

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### Research Intern

*Phi Dynamics*

*Remote, USA*

*May 2025 – Aug 2025*

- Used Guix for reproducible builds; created custom channel and forked dependencies to meet build reqs
- Implemented LLVM IR “namify” pass to standardize variable names; made IR the single source of truth
- Derived ASP facts and rules from LLVM IR and CFG for query-based path enumeration; persisted JSON intermediate for later fact/rule updates, supporting incremental recomputation and rapid fuzzer feedback.
- Designed a feedback-driven architecture for high-frequency fuzzer polling with incremental ASP fact updates

### Cyber250 Project - National Lead

*U.S. Space Force - i5*

*New York, U.S.A.*

*Nov 2024 - Present*

- Led the development of the Cyber250 course, an advanced hands-on cybersecurity training program under i5 Space in conjunction with the U.S. Space Force’s Space Training and Readiness Command (STARCOM).
- Managed a team of contributors, coordinating curriculum development while handling Controlled Unclassified Information (CUI) securely to deliver comprehensive cybersecurity education to students nationwide.
- Collaborated with professionals to ensure course content aligns with current defense cybersecurity standards.

### Laboratory Manager

*Cornell Maker Club*

*New York, U.S.A.*

*Jan 2025 - Present*

- Assisted members with diverse projects while maintaining rigorous usage and safety standards.
- Developed project proposals to increase operational efficiency and secure additional funding for initiatives.

### Head of Education

*Cornell Cybersecurity Club*

*New York, U.S.A.*

*Feb 2025 - Present*

- Founded senior education; organized weekly meetings for top performers for technical discussions on critical cybersecurity topics and tackle advanced cybersecurity challenges, ranging from web to binary exploitation.
- Assembled a team to perform in prestigious cybersecurity competitions like ISTS and other CTFs.

## Projects

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### Networks Lead - Wirefree Comms

*MIT Lincoln Lab - Socom Ignite*

*New York, U.S.A.*

*Sep 2024 – Apr 2025*

- Developed a secure short-range radio transceiver tailored for various military applications.
- Led networks development, innovating communication protocols and spec to enhance security and reliability
- Worked extensively with microcontrollers ranging from RPi4b to Teensy and NRFs.
- Constructed a makeshift Faraday cage utilizing 3D printing techniques and aluminum foil for proof-of-concept demonstrations, effectively isolating signals and preventing external detection

### Open Source Contribution

*Public Python Libraries | Pyloggor, KucoinPy, KucoinOBM, typekeeper*

*Around the Globe*

*Oct 2022 - Jul 2025*

- Built and maintained libraries for HFT & data infra; 1k+ first-week, 50k+ lifetime downloads
- Engineered KucoinPy to manage exchange communications via low-level TCP sockets; delivered order-execution latency of 20 ms avg with 9 ms peaks, surpassing typical industry benchmarks consistently.
- Simplified live market-data maintenance with async low-overhead streaming over unix domain sockets
- Developed supporting tooling: Pyloggor for robust structured logging and typekeeper for Python type-safety

## Skills

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Leadership, Linux Proficiency, Networking, Cryptography, Penetration Testing, MicroPython, Python, Java, Flask, FastAPI, Selenium, Docker, SQLite, RPI, NRF, RP2040, PN532, Guix