JOHN PAUL JEPKO

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EDUCATION

University of Michigan **Ann Arbor, MI**

Master of Science in Engineering in Computer Science (SUGS/AMDP) *Jan. 2023 – Dec. 2023*

GPA: 3.77/4.00

Coursework: AI, Privacy Enhancing Technologies, Advanced Compilers, Parallel Computing, Comp. Networking

Bachelor of Science in Engineering in Computer Science, Minor in Mathematics *Aug. 2019 – Dec. 2022*

GPA: 3.82/4.00

Honors/Awards: *summa cum laude*, four terms Dean's List and six terms University Honors

Coursework: DS&A, Web Development, Intro to Comp. Organization, Comp. Security, Software Engineering

WORK EXPERIENCE

University of Michigan **Ann Arbor, MI**

Undergraduate Research Assistant, Refraction Networking *Apr. 2022 – Oct. 2022*

- Developed configuration management system for censorship circumvention tools using Protobuf and Go, reducing client deployment time by 40% and expanding protocol compatibility across 3 platforms (pull request #94).
- Collaborated with a cross-university cybersecurity research team led by Prof. Halderman, successfully implementing 5 new open-source circumvention techniques designed to assist users in authoritarian regimes.
- Analyzed 10+ technical research papers on circumvention protocols, translating complex theoretical concepts into practical development solutions that enhanced system security and resilience.

PROJECTS

University of Michigan **Ann Arbor, MI**

Lead Developer, Reliable Transport Protocol, EECS 489 *Oct. 2023*

- Implemented a high-performance reliable transport protocol that achieved 99.8% delivery reliability over unstable networks, reducing packet loss by 90% compared to standard UDP while maintaining low-latency performance.
- Engineered fault-tolerant C++ client-server programs using sliding windows (Go-Back-N or Selective Repeat), handling concurrent connections with up to 50 clients in simulated network environments.

Project Lead, Michigan Data Science Team *Jan. 2023*

- Led a team of five undergrad students, building an NLP sentiment analysis model trained on data mined EDGAR filings, identifying a statistically significant causal relationship between filing sentiment and earnings surprises.
- Mentored junior team members in advanced data visualization in Python, PowerBI, and Tableau.

Developer, Matplotlib Open-Source Contribution, EECS 481 *Dec. 2022*

- Submitted and merged pull requests to Matplotlib (#24699 and #25281), the leading Python plotting library with over 80 million monthly downloads, fixing a critical performance bottleneck in the LaTeX cache manager (#23779).
- Engaged in code review, explaining code changes, and incorporating feedback from reviewers.

Product Manager, Full-Stack Instagram Clone, EECS 485 *Oct. 2022*

- Led a team of three developers to create both a client-side and server-side dynamic Instagram clone using a React JS front-end and a Python & Flask back-end, deploying on an AWS instance.
- Developed a RESTful API and SQL database to support post, comment, and account management.
- Incorporated user feedback to develop web features improving accessibility and user experience.

SKILLS

Programming Languages: C, C++, Python, Java, Go, JavaScript, SQL, Rust

Systems & Frameworks: Git, Agile, TCP/UDP, React, Flask, Docker, Protobuf, CUDA, OpenMPI, LLVM

Fields: Data Mining, Data Visualization, Machine Learning, Algorithm Design, Full Stack Development, Parallel Computing, Software Engineering, Cybersecurity, Relational Databases, REST APIs, Statistical Analysis