Ankit Mudunuri

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OBJECTIVE

Aspiring Software Engineer with a concentration in Cybersecurity, proficient in Python, Rust, and C++, eager to leverage AI-driven techniques to strengthen system security.

EDUCATION

Michigan State University | East Lansing, MI
Major: Computer Science (Concentration in Cybersecurity) | GPA: 3.8/4.0
Expected Graduation: December 2025
Relevant Courses: Intro to AI, Operating Systems, Computer Security, Computer Systems, Database Systems, Computer Networks

TECHNICAL SKILLS

Programming Languages: Python, Rust, C++, C, ARM Assembly, Java, PHP, SQL, HTML/CSS, TypeScript, JavaScript, VBA
Tech Frameworks: PySpark, TensorFlow, OpenCV, Git, Metasploit, Docker, AWS, Flask, Nginx, PyQT, SQLite, Win32, React
Management Platforms/Frameworks: Scrum, Kanban, Confluence, Jenkins, JIRA, Airflow

WORK HISTORY

Software Intern | Stellantis | Auburn Hills, MI **May 2024 – Aug 2024, May 2025 – Present**

- Developed Python plugins for the FiftyOne Data Visualization API to render L3 ADAS sensor signals, improving visibility of data and accelerating ML model training workflows.
- Architectured a suite of Python and Bash scripts–including an SSH-enabled metadata extractor and data-rate monitor—and automated upload of results to AWS S3 via PySpark, reducing manual data entry by 90%.
- Designing a suite of scripts to decrypt hexadecimal data from 12V battery usage sensors, translating raw sensor codes into actionable metrics and detecting errors per a detailed message-code guide.

Software Intern | Callings.ai | San Mateo, CA **May 2025 – Present**

- Designing and implementing an AI-driven job-application form-filling tool, leveraging NLP and browser-automation techniques to cut application time by an estimated 60%.

Software Intern | Electro-Matic, Inc | Farmington Hills, MI **Jul 2022 - Aug 2022, Oct 2022 - Present**

- Integrated Siemens HMIs with Rockwell PLCs using RS Logix 5000, Siemens TIA Portal, and Bash, avoiding full hardware replacements and saving significant capital costs.
- Engineered a Python GUI to convert legacy VB Advanced scripts into PHP classes via RegEx, saving 112 hours of manual coding.
- Deployed a PHP-MySQL permissioned login portal on Nginx-powered Raspberry Pi, enhancing access control for plant operators.
- Developing an ADP Message Builder with Python and PyQT5 to compose and dispatch LED signage content in an easy and efficient way.

Software Intern | Siemens Digital Industries | Livonia, MI **Jun 2021 – Aug 2021, Jun 2023 – Aug 2023**

- Assisted with a computer-vision anomaly detection pipeline in Python using OpenCV and TensorFlow to detect faulty parts on an assembly line, reducing manual inspection costs by $200K-$500K annually.
- Preprocessed IR/image data and prototyped point-cloud generation models, using OpenCV and TensorFlow, to inform future depth-estimation tasks.
- Automated SNMP communications via PySNMP scripts for seamless CLI management of factory equipment on a production network.

NOTABLE NON-WORK PROJECTS

Fragmented Virtual Hard Disk Self-Destruct System **Apr 2025 - Present**

- Developed a Rust-based tool leveraging the vhd-rs crate and Windows TPM APIs to fragment encrypted VHD images into randomized local storage, ensuring irrecoverability without proper reassembly.
- Implemented a TPM-authenticated login module that conditionally reassembles and decrypts the VHD on valid credentials or securely wipes fragments on failure.
- Optimized async I/O with tokio, benchmarking reassembly latency on 10–100 GB images and reducing processing time by 30%.

DBSCAN-Based Network Intrusion Detection System **Feb 2025 - Mar 2025**

- Captured and structured network flows using Scapy and Pandas, then applied scikit-learn's DBSCAN with grid-searched parameters, achieving 95% DoS detection accuracy.
- Automated validation by parsing Snort logs with snortparser and generating HTML anomaly reports with Jupyter Notebook visualizations.

PassCrackAI | A Password Manager with AI-Powered Password Strength Estimation **Nov 2024 - Feb 2025**

- Architected a CLI password manager in Rust using Argon2 and AES-GCM, managing key derivation with PBKDF2.
- Trained a TensorFlow LSTM model on a 10 M-record breached password dataset to estimate strength and predict attack susceptibility.

Flask-based Microservices Shopping System **Feb 2025 - Apr 2025**

- Containerized four Flask-based microservices with Docker and SQLite3 for a local shopping workflow, leveraging Flask's Jsonify for RESTful APIs.
- Secured user creation/login service with JWT (HS256) authentication and managed user permissions across services.

Communicate.AI | MHacks 16 Hackathon Project **Nov 2023**

- Collaborated in a team of 4 to build a Python script for real-time translated subtitles anchored to face-tracked video, enabling live cross-language calls.
- Leveraged OpenCV for detection/tracking, Google Cloud Speech-to-Text & Translate APIs, and Python multithreading to maintain sub-200 ms caption latency.