Samuel Rocco

Full Stack Software Developer

Email: samrocco.work@gmail.com
LinkedIn: https://linkedin.com/in/samuel-rocco
GitHub: https://github.com/SamuelRocco

Dedicated and skilled Software Engineer with a strong background in machine learning, data analysis, full stack and cybersecurity. Experienced in research and development with a focus on machine learning, full stack development, and IT solutions. Proficient in various programming languages and frameworks and committed to continuous learning and professional growth.

EDUCATION

Indiana University of Pennsylvania, Indiana, Pennsylvania
August 2020 – May 2024
Bachelor of Science in Computer Science, cum laude
Languages and Systems Track, Minor in Mathematics (ABET Accredited)

- **Focus on high-level concepts including Compiler Design, Kernel Programming, Operating Systems, Numerical Methods, Theory of Computation, and Artificial Intelligence.**

RELEVENT EXPERIENCE

NCAE-C Zero Trust Research
Research Assistant, IUP, Indiana, PA
April 2023 – August 2023

- **Developed a practical implementation of Zero Trust Architecture** for the IUP Autonomous Risk Mitigation for Zero-trust Architectures (ARMZTA) Research Project.
- **Wrote and implemented custom software** using MATLAB and Python for **data gathering and penetration testing**.
- **Contributed to the IEEE** Transactions Preprint on Zero Trust Architecture.
- **Collaborated with a team** of four students and three faculty members.

Undergraduate Summer Opportunity for Applying Research (U-SOAR)
Student Researcher, IUP, Indiana, PA
June 2023 – August 2023

- **Collaborated with faculty mentor on original research** focusing on Generative Adversarial Networks (GANs).
- Developed image denoising methods using **Python and OpenCV**.
- Contributed to the ARMZTA IUP Zero Trust Research Project by **applying GAN research**.

NCAE-C Internet of Things Anomaly Detection Research
Research Assistant, IUP, Indiana, PA
April 2023 – August 2023

- **Developed a practical framework for IoT anomaly detection** using Python.
- **Visualized Big Data from IoT** test bench to analyze cyber-attack characteristics.
- Gained expertise in anomaly detection, **machine learning, and data analytics**.

Optical Character Recognition Research
Research Assistant, IUP, Indiana, PA
January 2024 – May 2024

- Developed a **web-based interface** for text and **character detection** on hand-written manuscripts using **computer vision**.
- Created software using **JavaScript and Python for processing images** and translating them with **Neural Networks**.
- Gained expertise in **NumPy, Matplotlib, OpenCV, and PyWebView** for detecting text in ancient and damaged scripts.

TEACHING EXPERIENCE

Computer Science Tutor
Mathematics and Computer Science Department Tutor, IUP, Indiana, PA
September 2022 – December 2023

- **Assisted students** with assignments and projects in various computer science courses.
- Tutored **high-level courses including Assembly Language, Data Structures and Algorithms, and Object-Oriented Programming**.
- Demonstrated an understanding of required course topics for position qualification.

GenCyber Program
Student Assistant, IUP, Indiana, PA
March 2023 – September 2023

- **Developed teaching material** for camp modules on cybersecurity topics.
- Assisted in teaching and monitoring camp attendees and led hands-on activities.
- Gained knowledge in **red team strategies, steganography, social engineering, and network trafficking**.

EXTRA CURRICULAR

Cybersecurity Club
IUP, Indiana, PA
September 2022 – May 2023

- Collaborated with peers to discuss new security advances.
- Learned cybersecurity concepts such as **open-source intelligence, cryptography, and reverse engineering**.
- Represented IUP in **cyber games, hackathons, and capture-the-flag competitions**.

NCAE-C Cyber Games
Competition Team Member, IUP, Indiana, PA
February 2023

- **Represented IUP in the Northeast regional competitions**.
- Demonstrated skills in **networking and routing, Linux, cryptography, malware analysis, and different CTF topics**.
- Developed teamwork skills in a collaborative environment.

SKILLS AND EXPERIENCE

Programming Languages:

- **Python, Java, JavaScript, Bash, Unix, MIPS Assembly, SQL**

Tools:

- **TensorFlow, OpenCV, Pandas, SciPy, Scikit-learn, NumPy, Matplotlib, PyWebView, GIT, APIs**

Methodologies:

- **AGILE, Scrum, Server Administration, Cryptography**

Mathematics:

- **Discrete Math, Linear Algebra**

COURSE WORK

Calculus I, II
Intro to Numerical Methods
Discrete Mathematics
Linear Algebra
Object Oriented/GUI Programming
Artificial Intelligence
Unix Systems
Intro to Cryptography
Problem Solving/Structured Programming
Compiler Construction
Software Engineering Practices
Operating Systems
Assembly Language Programming
Data Structures and Algorithms
Theory of Computations