Jilin Zheng

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EDUCATION

Boston University, College of Engineering, Boston, MA — Expected May 2026
Bachelor of Science in Computer Engineering — GPA: 3.91

- **Honor:** Dean's List, Merit Scholarship
- **Relevant Coursework:** Operating Systems | Computer Architecture | Machine Learning | Cybersecurity | Robotics | Probability and Statistics | Logic Design | Algorithms and Data Structures | Software Engineering

PROJECTS

Do-It-Yourself Machine Learning! — February – April 2024

- Developed a Flask-based REST API for training multiclass image classification models and creating inference requests using scikit-learn
- Implemented MongoDB for CRUD operations managing users, images, models, and inferences
- Utilized Redis task queues for asynchronous model training and inference processing
- Containerized API with Docker and Docker-Compose for efficient deployment and orchestration

P2P Chat — April 2024

- Created a Python-based peer-to-peer chat system with peers capable of bidirectional communication through a local server and client, as well as a central server for user discovery
- Employed multithreading in peers to handle concurrent message sending and receiving, enhancing responsiveness
- Integrated SQLite for storing messages with basic sanitization to prevent SQL injection, ensuring data integrity

SIMON-Said! — December 2023

- Led team of 4 in implementation/verification of symmetric SIMON64/96 block cipher on Nexys A7 FPGA board
- Programmed FPGA in Verilog to perform parallel 64-bit block encryption/decryption on user messages with 96-bit keys, employing electronic codebook (ECB) mode of operation due to project time constraint
- Wrote Python script that uses serial communication via UART to interface with the Nexys A7, enabling users to easily input messages/keys and read corresponding ciphertext/plaintext

Rain-Sensing System for Automobiles — May – June 2023

- Led team of 4 members in development of a rain-sensing system for automobiles, automatically activating car headlights and windshield wipers with a 90% success rate
- Leveraged Arduino ADC and sampling over time to obtain rain conditions from a photoelectric liquid-level sensor, ensuring control of headlight brightness and motor speed via MOSFETs
- Debugged Arduino program reading sensor inputs, improving success rate of low/high-intensity rain detection from 30% to 80%
- Achieved an average activation time of 1.885 seconds, accomplishing the < 2 second goal

PROFESSIONAL EXPERIENCE

General Dynamics Mission Systems, Taunton, MA, *Network Design Engineering Intern* — May – August 2024

- Supported the Army's One Tactical Network transmission and networking performance and load testing
- Tested a multitude of radio frequency and networking devices including HNR and NCW radios, GPS, switches, routers, and firewalls for operation, vulnerabilities, and exploits
- Debugged automation tool for REDCOM Sigma call manager configuration, enabling bidirectional VoIP calls
- Spearheaded effort to incorporate IxChariot into test environment to improve network performance assessment

Laboratory of Networking & Information Systems, Boston, MA, *Research Assistant* — May 2023 – May 2024

- Conducted research on Kubernetes autoscaling vulnerabilities, focusing on the Yo-Yo attack and its impact on container-based environments
- Designed and implemented a local testing environment using Docker Desktop for Windows, incorporating Prometheus and Grafana for comprehensive monitoring and visualization
- Utilized JMeter to simulate realistic application load, modeling request arrivals as a Poisson process

SKILLS & INTERESTS

Programming: C | C++ | Python | Rust | Verilog
Tools: Linux | GDB | Git | Docker | Postman
Languages: English (fluent) | Mandarin Chinese (fluent)
Interests: Embedded Systems | Backend Development | AI/ML