

Mahyar “Mike” Vahabi

Graduate Software Engineer

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Education

University of California, Santa Cruz

Santa Cruz, CA

• **Master of Science** in Computer Science – **GPA:** 4.0

Sep. 2024 - Mar. 2026

• **Bachelor of Science** in Computer Science – **GPA:** 3.72

Sep. 2020 - June 2024

Relevant Coursework: Software Development, Data Structures and Design Patterns, Object-Oriented Programming, Computer, Networking, Databases, Machine Learning, Artificial Intelligence, Data Science, Design, Web Development, Fullstack

Skills

Programming Languages: Python, C, C++, java, SQL, HTML, CSS, JavaScript, Typescript, Ruby

Database & Dev. Tools: PostgreSQL, MySQL, Kubernetes, Docker, Rest API, React, AWS (EC2, S3), Google Cloud, Linux, GitHub

Languages: English, Persian, Spanish

Professional Experience

AIEA Lab – Santa Cruz, CA

Aug. 2023 - Present

Research Software Engineer

- Leading an open source research on LLM security through configuration of cryptographic techniques to mitigate inversion attacks
- Developing protective methods beyond traditional differential privacy, applying gradient clipping and noise addition techniques
- Building Python-based tools to identify and address AI security vulnerabilities, reducing data leaks and prompt injections by 90%
- Integrating oblivious RAM techniques in C++ to securely store and query a Retrieval-Augmented Generation model, preventing data leakage with 10ms overhead

Baskin School of Engineering – Santa Cruz, CA

Jan. 2023 - Present

Computer Science Teaching Assistant

- Instructing Data Structures & Algorithms to over 1,000 students through hands-on complex C and C++ projects
- Managing a team of 15+ teaching staff by delegating tasks, mentoring, and optimizing grading workflows for accuracy and efficiency
- Conducting 20 labs and 80 hours per quarter to strengthen students’ problem-solving, programming, and debugging skills using GDB
- Deployed 10 automated testing Bash scripts to assess students’ programming projects, covering unit, functional, and memory leak tests with Valgrind and custom tools

Scale AI – San Francisco, CA

June 2023 - Sep. 2023

Software Engineering Intern

- Enhanced Gemini’s chatbot code generation accuracy to 70% by refining prompts, applying Software Development Life Cycle practices
- Programmed 100+ optimized solutions for prompt-response evaluation in Python, C++, C, Java, and SQL, achieving 15ms latency
- Executed pairwise comparisons of 50+ model responses, refining model training data for Reinforcement Learning with Human Feedback
- Performed in-depth analysis of 50+ code-related prompts to evaluate quality, coherence, and compliance with requirements

Projects

Multi-Threaded HTTP Server

- Programmed a multi-threaded C and Python-based server using socket programming for efficient network management
- Achieved sub-20ms response times by utilizing semaphores for thread synchronization, handling 1000+ concurrent threads
- Constructed a queue-based architecture for cross functional and sequential request processing and ensured atomicity
- Optimized system performance with AWS Elastic Load Balancing and Nginx Caching to reduce server load for recurring content

Bitcoin Crypto Price ML Prediction

- Implemented a machine learning model to predict Bitcoin price trends by employing RNN architectures, yielding a 90% accuracy
- Executed LSTM and GRU layers to enhance forecasting accuracy and model performance in time-series and computer vision tasks
- Utilized TensorFlow, PyTorch, and Keras for model training, fine-tuning hyperparameters, and evaluating prediction results