Aryan Magoon

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Education

University of Virginia — Charlottesville, VA
Bachelor of Science in Computer Science Minor in Electrical Engineering — *Aug. 2020 – May 2024*

Experience

Undergraduate Teaching Assistant — Jan. 2023 – Present
University of Virginia — *Charlottesville, VA*

- Reinforcing concepts for 500+ students in Data Structures, Algorithms, Computer Architecture, and Operating Systems

Software Engineer Intern — May 2023 – August 2023
Apple — *Cupertino, CA*

- Simplified app launch process for billions of devices running iOS and iPadOS by decoupling system components to provide higher level of synchronization and reducing overall system complexity using Objective-C
- Optimized application display and interaction by managing the async rendering state of active applications
- Proved the capability of new infrastructure by developing new procedures not possible before and displaying them

Research Scientist — Dec. 2021 – Aug. 2022
Acture — *Virginia Beach, VA*

- Enabled users to enhance image quality set by user-controlled dynamic scale factor by generating image training pairs by applying programmatic multi-stage degradation to images
- Decreased cost of server-side machine learning by 30% by engineering a Flask API to serve the model and containerizing it using Docker and Kubernetes
- Increased user retention by 4% by leveraging Django with asynchronous processing and a custom GraphQL schema with subscriptions that returned finished tasks to the user displayed on the frontend using React

Software Engineer Intern — May 2022 – Aug. 2022
Synergy — *Reston, VA*

- Achieved over 80% code coverage on the app and microservice by writing comprehensive unit tests using Jest
- Resolved 35 security concerns with software dependencies by refactoring code to reduce vulnerabilities
- Collaborated with other engineers in a scrum team to reduce vulnerabilities by performing code reviews

Research Intern — Aug. 2021 – Jan. 2022
University of Virginia — *Charlottesville, VA*

- Conducted comprehensive experiments to validate the robustness of deep reinforcement learning algorithms against adversarial attacks, contributing to a 15% improvement in system resiliency under simulated attack scenarios
- Created an adaptive weighting mechanism to dynamically adjust state importance during reinforcement learning training, increasing model stability when subjected to adversarial inputs
- Delivered 7% better efficacy in quantifying importance of the current state, resulting in a lower rate of adversarial attack success

Projects

RISC-V CPU | *VHDL, Questasim, Quartus Prime, Assembly* — Dec. 2021 – May 2022

- Designed and implemented single-core single-thread RISC-V CPU using VHDL and exhaustively tested the components with VHDL/SystemVerilog Testbenches and the full system with Assembly

easy-gql | *JavaScript, PostgreSQL, TypeScript, GraphQL* — Oct. 2022 – Dec. 2022

- Created CLI tool to allow developers to get started with GraphQL quicker and easier providing them with a created TypeScript GraphQL API with pre-configured PostgreSQL instance

Technical Skills

Languages: C/C++, Python, Java, HTML/CSS, JavaScript/TypeScript, SQL/NoSQL, Bash, Rust, Objective-C, R
Frameworks: React, Node.js, Redux, Express.js, React Native, Flask, Django, jQuery, Bootstrap, Tensorflow, PyTorch, Keras, NumPy, pandas, ROS, Jest, CUDA, Apache Kafka, Apache Spark
Developer Tools: Git, GraphQL, Jenkins, Amazon Web Services, Google Cloud Platform, Kubernetes, Docker