RAHUL SHANMUGHAM

rahul.shan@utexas.edu
github.com/rahuls02 | linkedin.com/in/rahul-shanmugham

EDUCATION

The University of Texas at Austin | B.S. in Computer Science, B.S. in Mathematics **May 2024**

Overall GPA: 3.8

Relevant Coursework: Algorithms and Complexity, Graduate Operating Systems, Graduate Computer Graphics, Computer Networks, Data Structures, Compilers, Network Security, Stochastic Processes, Applied Statistics, Mathematical Statistics, Game Theory

EXPERIENCE

Yext, New York City, NY

Software Engineer Intern – Core Platform **May 2023 – August 2023**

- Designed and migrated the implementation of a global Apps service, which enables first/third party developer app workflows and turnkey solutions that leverage the Yext API to be made available globally in any region.
- Full ownership over a product feature enabling app developers using the Yext API to input and manage data hosting and processing information in an app's developer console using ReactJS and MySQL.

Intel Corporation, Austin, TX

Software Engineer Intern – Compiler Optimization Research Team **August 2022 – January 2023**

- Researched and designed compiler optimization algorithms using C++ and Python to improve the ROSE Program Analysis and Transformation compiler.
- Tested and analyzed source code modules using varying compiler architectures to retrieve data points for an internal web application built with ReactJS

Software Engineer Intern – Performance Analysis Tools Team **May 2022 – August 2022**

- Constructed the graphical user interface for an internal tool using ReactJS, allowing developers to determine specific features in their code that limit and hinder overall application performance.
- Designed the application's database architecture using MySQL, enabling data fetching from multiple data sources using the ETL methodology.

Applied Research Laboratories, Austin, TX

Software Engineer Intern - Space and Geophysics Laboratory **May 2021 – August 2021**

- Wrapped major C/C++ codebase (https://github.com/SGL-UT/GPSTk) to Python using SWIG, allowing for major functionality upgrades to the underlying Python toolkit.
- Diagnosed and debugged pre-existing memory management issues in the Python toolkit resulting in tremendous performance improvements in the data pipeline.

PROJECTS

Ray Tracer

- Developed a Whitted-Style Ray Tracer from scratch in C++ using a BVH acceleration data structure to optimize rendering times.
- Implemented a multitude of specialized features including texture mapping and cube mapping, stochastic supersampling for anti-aliasing, and normal mapping to simulate surface texture details.

White Noise Reduction using Style-Based Generative Adversarial Networks

- Demonstrated efficacy of utilizing specific pretrained StyleGANs with our framework to reduce white noise in images containing up to **70% white noise** with **86% accuracy**.
- Project Code: https://github.com/rahuls02/Image-Noise-Reduction

SKILLS

Languages: Java, Python, C#, C++, C, JavaScript (React.js), Ruby, Go, Rust, SQL, Protobuf, Terraform (HCL)
Frameworks & Tools: Docker, Kafka, RabbitMQ, Play!, RPC/gRPC, Bazel, Gerrit, Nomad, Airflow
Testing: Tilt, JUnit, Mockito, Playwright