Rachel Huang
703-732-8968 | rhuang03@wm.edu | https://rrachelhuangg.github.io/dev/

Education

William & Mary **Williamsburg, VA**
B.S. in Computer Science, B.S. in Mathematics *May 2026*
Relevant Coursework: Principles of Programming Languages, Algorithms, Ordinary Differential Equations, Software Development, Computer Organization, Intermediate Linear Algebra, Data Structures, Discrete Structures, Foundations of Math

Thomas Jefferson High School for Science & Technology **Alexandria, VA**
Advanced Studies Diploma *June 2023*
GPA: 4.38/4.00 · SAT: 1570
Relevant Coursework: Artificial Intelligence, Linear Algebra, Multivariable Calculus, Website Development, Mobile Development, Data Structures, Robotics, Engineering Research Lab

Work Experience

Company Employee at Black Cape, Inc
Software Engineering Intern *May 2024 - Current*
- Created FastAPI endpoints for ingestion and processing layers of data platform and extended Kestra pipelines
- Contributed to the productionization of company's LLM chat bot by researching and implementing Retrieval Augmented Generation techniques using Python, Docker, MinIO, and Qdrant.

Google Student Developer Club at William & Mary
Core Team Web Developer *October 2023 - Current*
- Building the Global Americas website that improves manipulation and display of commercial ship voyage data
- Created Figma designs for user interface, implemented designs with React, and integrated with Google Firebase

Research Experience

Undergraduate Machine Learning Researcher at William & Mary
Mentored by Professor Pieter Peers, Department of Computer Science *January 2024 - Current*
- Extending Matfusion image diffusion model for SVBRDF estimation of photographs for material generation and rendering
- Implemented noise rolling and border inpainting techniques for image diffusion using Pytorch and Diffusers

Monroe Scholar Undergraduate Researcher at William & Mary
Exploring the Optimization of Measurement-Based Quantum Circuits Using ZX-Calculus *May 2024 - Sept. 2024*
- Conducted literature review of publications on optimization of measurement-based quantum circuits
- Assembled an end-to-end method of applying ZX-calculus to measurement-based quantum circuits

Publications/Awards

- Virginia Space Grant Consortium STEM Bridge Scholarship *2024*
- Monroe Scholars Designation and 2024 Research Grant *2023*
- National Merit Scholarship Finalist *2023*
- Comparing Music with Dynamic Programming String-Matching Algorithms
  Department of Computer Science Journal of Student-Scientists' Research *2022*
  https://journals.gmu.edu/index.php/jssr/article/view/3370
- Comparisons of Classic and Quantum String Matching Algorithms
  2022 4th International Conference on Advanced Information Science and System *2022*
  https://dl.acm.org/doi/pdf/10.1145/3573834.3574498

Skills

Languages: Python, Java, Javascript, C, HTML, CSS
Tools/Frameworks: Git, Linux, FastAPI, React JS, Docker, MinIO, Kestra, Bootstrap, Android Studio, Figma, Firebase, Arduino