Zain Karim

zain@zainkarim.com • (469) 586-7790 • linkedin.com/in/zainkarim • github.com/zainkarim

EDUCATION

Bachelor of Science in Computer Science   Expected graduation May 2026
The University of Texas at Dallas, 3.91/4.00 Major GPA   *Richardson, TX*
- Relevant Coursework: Data Structures and Algorithms, UNIX Systems Programming, Computer Architecture.

EXPERIENCE

Apple   August 2024 – Present
Specialist   *Dallas, TX*
- Delivered personalized solutions and technical expertise to **thousands of customers**, driving sales and enhancing customer retention and satisfaction.
- Managed product inquiries, contributed to the optimization of sales strategy, and actively engaged leads, subsequently generating **over $10,000 in revenue** per month.

Responsible AI Laboratory at the University of North Texas   May 2023 – September 2023
Undergraduate Researcher   *Denton, TX*
- Engineered **Generative Adversarial Networks (GANs)** with **Python** for synthetic image generation.
- Engaged in experimental design for manipulating image generation parameters and applied computational imaging techniques to reverse engineer popular AI image generation tools.

PROJECTS

Image Processing Command Line Utility   *https://github.com/zainkarim/pixi-cli*
- Developed and published a high-performance **Python**-based image processing CLI tool, integrating **custom C++ hooks** for advanced operations like cropping, exposure adjustments, and blurring, achieving a **200% performance improvement** over Python's native libraries.
- Rewrote image manipulation algorithms in **C++,** reducing dependency on **PIL** for enhanced speed and scalability, optimizing the tool for large image files and batch processing.

Interactive 3D Solar System Simulation   *https://github.com/zainkarim/solar-system-model*
- Developed a full-stack interactive 3D model using **React**, **Three.js**, and **Node.js**, featuring dynamic data visualization of celestial bodies via a **RESTful** API connected to a **MySQL** database.
- Enhanced user experience by implementing responsive web design and **WebGL** rendering techniques, achieving efficient data management and seamless interactivity in a full-stack environment.

Live Dallas Skyline Color Analysis Twitter Bot   *https://github.com/zainkarim/dallas_skybot/*
- Developed an automated **Python**-based color analysis tool for live video feeds, implementing **PIL** and a **custom algorithm** to identify and match the Dallas Skyline's colors to the nearest Pantone equivalent.
- Integrated the **Twitter API** for automatic tweeting of image analysis results and deployed using **AWS EC2** and **Docker**, ensuring scalable and reliable application performance for continuous live video feed processing.

LEADERSHIP

Collin College
Programming Fundamentals I Tutor
- Held weekly virtual and in-person office hours to assist a class of over 20 students in supplemental instructions for Programming Fundamentals I in **C++**, resulting in a 6% increase in class averages.

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Java, JavaScript, ASM, Python, x86 Assembly
- **Frameworks and Libraries:** React, Three.js, OpenCV, PIL, Matplotlib, NumPy, NLTK
- **Tools:** AWS EC2, Docker, Git, Linux, MASM, MySQL, Unix, Visual Studio Code, VIM, WebGL