

# Daniyal Khan

[🌐 danikhan632](#) | [📄 daniyalmkhan/](#) | [✉ danikhan632@gmail.com](#) | US Citizen | [www.daniyalkhan.dev/](#)

## EDUCATION

---

### Georgia Institute of Technology

B.S. Computer Science

Expected December 2023

High Honors

**Concentrations:** Intelligence/AI and Systems and Architecture

**Relevant Coursework:** Agile Development, Artificial Intelligence, Advanced Algorithms and Data Structures, Robotics and Perception, Computer Architecture, Circuit Design Lab

## EXPERIENCE

---

### OpenAI

July 2023-

Open Source Contributor SWE

Triton Project

- Implemented an LLVM backend interface using C++ to facilitate the conversion between different LLVM dialects, bringing Triton to Apple Silicon Macs.
- Combined C++ expertise with SPIRV-Cross to create an integrated cross-compiling toolchain, enabling efficient conversion from diverse LLVM-Dialects to Metal Shader Language
- Architected and developed a JIT compiler for GPU Metal kernels within Triton, harnessing the power of C++ and SPIRV-Cross, resulting in a remarkable 70%+ speed increase in large matrix multiplication tasks on Apple Silicon Macs.

### Microsoft- Guidance Project

May 2023 - July 2023

Open Source Contributor SWE

- Architected and implemented LLM support system with more efficient memory and disk-swapping for larger LLMs
- Harnessing the power of Token and Regex processors, led the orchestration of hundreds of LLMs to generate structured, schemaful data, boosting accuracy from 63.04% to 76.01%.
- Transformed the token generation process by offloading operations to integrated REST API.

### NCR Software Engineering

May 2022 - August 2022

Software Engineering Intern

Atlanta, Georgia

- Led the creation of an internal debugging tool, facilitating real-time monitoring and management of MQTT messages
- Designed and implemented a dynamic frontend using React, deeply integrating TypeScript and Redux to ensure a seamless user experience and efficient state management.
- Mastered the intricacies of SQL to ensure optimal logging, storage, and retrieval of MQTT messages, enhancing system responsiveness and reliability.
- Pioneered a custom TreeSet data structure, optimizing data modification and retrieval processes

## PROJECTS

---

### Auto-GPT

2023

Machine Learning Engineer

AI-based Financial Trading System

- Architected an AI system enabling agents to autonomously trade stocks by analyzing real-time financial data and trends.
- Seamlessly integrated AI with Apple's iMessage system, empowering the agent to craft contextually accurate text responses
- Pioneered an AI-driven task management system via Todoist integration, resulting in notable increases in user productivity.

### iMessage API

2023

Software Developer

Chatbot Integration Platform

- Developed a Flask Python API to bridge Apple's iMessage with external devices, enabling applications such as chatbots.
- Automated iCloud contact synchronization via the API, providing real-time contact updates to all users.

### BuzzOS

2023

System Architect

Monolithic x86 Operating System

- Spearheaded the architecture of a Rust-based Kernel Driver tailored for efficient graphics rendering.
- Designed and integrated user libraries that facilitated system calls from userspace processes.
- Broadened hardware support by crafting specific drivers for vital components, including keyboard, mouse, and timer.

### Clean Up Crew

2022

Full-Stack Developer

Community Improvement Platform

- Conceptualized and developed a crowdsourcing platform, bridging communities with contractors for targeted improvements.
- Employed a robust tech stack, integrating Next.js and MongoDB to design a fluid and responsive UI
- Pioneered an intuitive posting mechanism, strategically prioritizing community issues based on user engagement metrics and location data.

### Create-Cpp-App: npm for C++

2022

System Architect

Monolithic x86 Operating System

- Build an intuitive CLI tool for building C++ apps with an npm experience
- generates makefiles and automatically updates CMake files for fast developer experience
- includes built-in testing, address sanitization, benchmarking and other tools for building production-ready C++ apps

## SKILLS

---

**Programming languages:** Rust, C++, TypeScript, Go, C++, Dart, Python, Java, C#, SQL, Bash, JavaScript, HTML, CSS

**Frameworks Software:** Flutter, Axios, Flask, Docker, LLVM, CUDA, Pytorch, React, Springboot, Maven, React Native