

Muhammad Khalid

github.com/muhammadkhalid-03 | muhammadkhalid200314@gmail.com | https://muhammad-khalid.vercel.app
linkedin.com/in/muhammadkhalid003

EDUCATION

University of Iowa

Iowa City, IA

Accelerated *M.S. in Computer Science*

Expected Graduation - 2027

- Accepted into competitive undergraduate to graduate program

Grinnell College

Grinnell, IA

B.A. in Computer Science

Expected Graduation - 2026

- Cumulative GPA: 3.67/4.0, In-major GPA: 3.73/4.0, Deans list Spring 2023 & Fall 2023
- Selected Coursework: Computational Methods, Software Design & Development (ongoing), Operating Systems & Parallel Algorithms, Data Structures & Algorithms, Object-Oriented Programming, Linear Algebra

EXPERIENCE

Research Assistant

May 2024 – Dec 2024

ELBICA Lab, Grinnell College

Grinnell, IA

- Developed **python** software to integrate visual and verbal data stored using **distributed representations**
- Implemented **causal inference** models to guide **decision-making** based on analyzed data
- Utilized **OpenCV** to break down parts of 2-D graphs to be used for inference

Software Developer, Intern

June 2023 – Aug. 2023

10Pearls

Karachi, Pakistan

- Developed a full-stack fitness-tracking application using **Flask REST** with **JavaScript** & **PostgreSQL**
- Implemented **Flask authentication** with password hashing for secure user accounts
- Implemented **SQLAlchemy ORM** resulting in **40% less code** & improved query performance

Computer Science Grader

Sep. 2023 – Dec 2024

Grinnell College

Grinnell, IA

- Graded **40+** weekly labs, reading assignments, and projects in **Java** (DSA), **Racket** (Functional Programming)
- Debugged** code written by students, providing **detailed feedback** during weekly meetings

PROJECTS

College Marketplace App | *React Native, TypeScript, Django, PostgreSQL, Expo, Zustand*

Jan 2025 – present

- Leading a team of **4 developers** to build a **full-stack mobile marketplace app** for college students
- Developed **OTP authentication**, persistent login via **AsyncStorage** & **image moderation** via an **API**
- Implemented real-time chat with **Django Channels** & **websockets** for direct communication
- Leveraged **Django REST** with **React Native** & **Zustand** state-management for **search & filter** functionality

MCMC Cipher Cracker | *Python, Next.js, Django, Typescript*

August 2024

- Developed a **full-stack** web app to crack substitution ciphers using **Django REST** with **Next.js** as the frontend
- Implemented an **MCMC-sampling algorithm** w/ custom acceptance probability & cipher space exploration
- Integrated a pre-trained **GPT-2 model** & Python's **multiprocessing** library to bypass sampling limitations

EXTRACURRICULAR EXPERIENCE

Pioneer Weekend

September 2023

Grinnell College

Grinnell, IA

- Designed an **app** for an **online college marketplace** w/ an **automated item listing** feature, winning **\$900**
- Collaborated w/ a team of **3 developers** to present an **MVP** to a panel of **entrepreneurs & college president**

MSA President

Aug. 2024 – present

Grinnell College

Grinnell, IA

- Lead the Muslim Student Association w/ an **\$11000+** annual operating budget and **70+** active student members
- Organize regular events on campus through collaborative initiatives w/ other organizations

TECHNICAL SKILLS

Proficient: Python, TypeScript, Next.js, Django, React, C, Java, R

Familiar: PostgreSQL, Zustand, Pandas, Flask, NumPy, OpenCV, RShiny