

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: 3.7/4.0, In-major GPA: 3.75/4.0, Deans list all semesters
- Selected Coursework: Computational Methods, Software Design & Development, 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

PioneerMart | *AWS, React Native, TypeScript, Django, PostgreSQL, Expo, Jest, Nginx*

Jan 2025 – present

- Led a team of **4 developers** to build an **online marketplace app** for Grinnell students using **agile** workflows
- Implemented automated **image/text moderation**, **real-time chat**, **OTP auth**, and **AWS S3** file storage
- Grew to **300+ active users** within **1 week** through campus outreach and rapid iteration

MCMC Cipher Cracker | *AWS Lambda, Python, Next.js, TypeScript*

August 2024

- Developed a **full-stack** web app to crack substitution ciphers using a **serverless AWS backend** serving a **Next.js** frontend
- Implemented an **MCMC-sampling algorithm** with custom acceptance probability & cipher space exploration
- Leveraged concurrent **Lambda invocations** and **ChatGPT API** to select the most accurate deciphered message

EXTRACURRICULAR EXPERIENCE

Pioneer Weekend

September 2023

Grinnell College

Grinnell, IA

- Designed an **app** to reduce college waste with **automated listings** via the **ChatGPT API**, 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, React Native, Expo

Familiar: AWS, PostgreSQL, Nginx, Jest, Zustand, C, Java, Flask