

# MUBARAK ALI PIRACHA

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## EDUCATION

### University of Waterloo

Sep 2025 – Present

*Bachelor of Mathematics, Computational Mathematics (Co-op)*

Waterloo, ON

– **Relevant Coursework:** Functional Programming, Data Abstraction & Algorithms, Software Development

## EXPERIENCE

### Software Engineering Intern

May 2025 – Aug 2025

*Kassam Trading Company*

- Developed a modular **internal data-processing tool** in **Python (Pandas/NumPy)** to ingest and standardize **multi-currency export + pricing data**, enabling consistent weekly reporting across **3+ destinations**.
- Cleaned, normalized, and validated **10k+ rows** of tabular datasets across disparate sources, catching **20+ recurring data issues/week** while reducing reporting errors by **15%** through rigorous schema and duplicate detection.
- Designed and implemented **shipment and client tracking workflows** that automated KPI generation for export operations, cutting manual spreadsheet work by **~30%** and providing clearer visibility into fulfillment status.

### Information Technology Intern

Jan 2025 – May 2025

*Hamdardi.pk*

- Maintained and improved a **production web platform** by **debugging backend issues** and optimizing **request-handling logic**, reducing repeated user-facing failures and improving overall **platform reliability by 20%**.
- **Automated volunteer onboarding** by building custom **form ingestion workflows** with **JavaScript/Node.js**, eliminating manual processing tasks and reducing administrative workload by **3–5+ hours/week** during peak periods.
- Added robust **input validation**, sanitization, and structured **error logging** to the platform's **core API**, reducing incomplete form submissions by **25–35%** and significantly improving **operational data integrity**.

## PROJECTS

### Match My Resume AI [GitHub](#)

Python, NLP, React, Node.js

- Built and deployed a **full-stack resume analysis platform** using **React** and **Node.js/Express**.
- Implemented a **NLP scoring engine** using **TF-IDF** and **cosine similarity** to evaluate skills match and **ATS fit**.
- Parsed **PDF/DOCX resumes**, exposed **REST APIs**, and generated actionable keywords and scoring insights.

### Barakah-Link (UmmahHacks) [GitHub](#)

TypeScript, Maps API, SMS Integration

- Built and deployed a **real-time food redistribution platform** using **TypeScript**, **Python**, and **Maps API**, enabling **location-based** donor-to-recipient matching and reducing friction in **surplus food discovery**.
- Developed a **TypeScript frontend** and contributed to a **Python backend** implementing **geospatial filtering**.
- Integrated **SMS-based access** to support users without **smartphones or stable internet**, improving accessibility.

### Multi-Agent Task Planning AI [GitHub](#)

React, Supabase, LLMs, Postgres

- Designed a **multi-agent LLM orchestration system** with Planner, Critic, and Improver agents via **Supabase**.
- Implemented sequential workflows with **strict validation** and defensive parsing to improve **LLM reliability**.
- Built and deployed a **React-based frontend** visualizing real-time agent execution in a serverless architecture.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, TypeScript, SQL, C++, Java, C, Racket, VB.NET

**Web Development:** React.js, Node.js, FastAPI, Tailwind CSS, HTML, CSS, RESTful APIs

**Data & AI Tools:** Pandas, NumPy, VIFinance, Cursor, GitHub Copilot, v0, Antigravity

**Infrastructure & Tools:** AWS, Linux/Unix, Git/GitHub, VS Code, Postman, Agile/Scrum, Jira

**Databases:** PostgreSQL, MySQL, MongoDB

## LEADERSHIP & INTERESTS

**Design Teams:** UW Formula Electric, WAT AI Team

**Clubs:** Computer Science Club, Data Science Club, Entrepreneurial Club

**Sports:** Captain-Cricket Team, Captain-Soccer Team