

# Oumer Gharad

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## EDUCATION

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### University of Ottawa

Expected Graduation: Dec 2028

Honours Bachelor of Science in Computer Science, 2nd Year, CGPA: 9.27/10.0

Ottawa, Ontario, Canada

- Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Databases

## TECHNICAL SKILLS

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**Languages:** Java, Python, Go, C++, TypeScript, JavaScript, SQL, HTML/CSS

**Web Frameworks:** React, Next.js, React Native, Django, FastAPI, Spring Boot

**ML / Data Science:** PyTorch, scikit-learn, NumPy, pandas, SHAP, YOLOv8, OpenCV

**Databases:** PostgreSQL, MongoDB, Redis, Supabase

**DevOps & Tools:** Linux, Bash, Git, Docker, TCP/IP, CI/CD Pipelines, Vercel, Railway, Render

## EXPERIENCE

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### Software Developer – Kelpie Robotics

Sep 2025 – Present

University of Ottawa

Ottawa, ON

- Automated detection of **5** underwater object classes via **YOLOv8** + **COLMAP**, processing **200** filtered frames per run
- Achieved  $\pm 1$  cm accuracy in **300s** via **GPU**-accelerated COLMAP SfM/MVS with  $O(n)$  sequential feature matching
- Containerized the full vision stack with **Docker** to ensure consistent deployment across heterogeneous hardware
- Implemented **TCP**-based sensor data streaming with timeout and recovery handling to ensure reliable flow

### Machine Learning Research Assistant

Feb 2026 – Present

Mer Lab, University of Ottawa | Supervised by Prof. Arvind Mer

Ottawa, ON

- Achieved **0.75 ROC-AUC** on a **207**-patient cohort by training a **Python** RandomForest on TCGA ovarian cancer expression matrices
- Applied **SHAP** TreeExplainer to identify the top **20** survival-driving genes for clinical review
- Validated generalizability across TCGA (n=**207**) and GSE102073 (n=**84**) via Kaplan-Meier OS with log-rank testing
- Reduced input dimensionality by **97%** (**48,167** to **1,565** genes) via expression thresholding and z-score normalization
- Contributing to a manuscript on genomic survival prediction in ovarian cancer for journal submission

### Software Engineering Intern

Jan 2026 – Present

The Acquist

Remote

- Architected a **React Native** + **TypeScript** monorepo with shared API and type packages for a talent marketplace
- Implemented **Supabase** OAuth with protected routing, session persistence, and onboarding gates for user activation
- Designed a **PostgreSQL** schema with full-text search, **RLS** policies, and cursor-based pagination across **11** API modules, reducing load times by **35%**

### Mobile Health Developer (Volunteer)

Apr 2026 – Present

L'Abbraccio ODV | University of Ottawa

Remote

- Restored a **React Native** maternal health app for rural Benin by resolving **RLS** across **14** tables and building a real-time labor monitoring dashboard

## PROJECTS

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**NestFinder** | 2nd Place, uOttaHack (YellowCake) | Next.js 15, TypeScript, FastAPI, Python

[Live Demo](#)

- Built a rental platform on **Solace Agent Mesh** to orchestrate intelligent multi-agent AI listing workflows
- Scraped live rental listings across multiple platforms using **YellowCake** to power real-time data ingestion
- Ranked Ottawa listings by livability and safety metrics, placing **2nd** out of **70+** teams at uOttaHack

**Kairo – AI University Scheduler** | Python, TypeScript, Django, PostgreSQL, Docker, Redis

[Live Demo](#)

- Reached **20+** active users by scraping **10,000+** classes across **140** subjects with **100%** data integrity
- Architected a **Django** schedule generator with concurrency handling to eliminate all student registration conflicts
- Containerized services with **Docker** and added **Redis** caching to improve API throughput by **40%**
- Automated **CI/CD** via **GitHub Actions** with health-check retries to achieve zero-downtime production deploys