

# Mohammed Asrar Ali

Ottawa, ON | +1 (807) 357-7860 | [mali46@lakeheadu.ca](mailto:mali46@lakeheadu.ca) | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

## EDUCATION

### Lakehead University

Honours B.Sc. in Computer Science (AI & Web Development), GPA: 3.7/4.0

- Dean's List; Tamblyn Merit Scholarship
- Coursework: Data Structures & Algorithms, OOP, Database Management, Machine Learning, Linear Algebra, Statistics

Thunder Bay, ON

Expected Apr. 2027

## EXPERIENCE

### Software Developer Co-op

TrendAI Jan. 2026 – Present

Ottawa, ON

- Building and testing features for the Cloud One platform using Java; integrating CI/CD pipelines with Jenkins and validating deployments on AWS EC2 in an Agile team
- Ported agent support to SUSE Linux 16; updated deployment scripts, OS mappings, UI metadata, and versioning pages across the platform
- Delivered a Python report generator to a customer in 3 days by aggregating platform data; PM approved integration into the existing reporting suite

### Software Engineering Intern

Maintair Aviation May 2024 – Aug. 2024

Thunder Bay, ON

- Built and deployed a full-stack flight-schedule manager (Flask, React) on Azure App Service, replacing spreadsheets and reducing scheduling errors by 40%
- Designed flight scheduling tables in Azure SQL Database and stored static assets in Blob Storage; automated weekly reporting for stakeholders
- Implemented REST APIs secured with Managed Identities and instrumented Application Insights metrics/alerts to support reliability and troubleshooting

### Volunteer Teaching Assistant

Code4kids May 2023 – Present

Remote, Canada

- Mentoring 30+ learners in weekly Python and web-development sessions; delivering project-based curriculum and debugging assistance

## PROJECTS

### System Design Interview Assistant | Python, RAG, BM25, ChromaDB [Demo]

Dec. 2025 – Feb. 2026

- Built a RAG system indexing 11K+ chunks with hybrid retrieval (BM25 + semantic vectors), achieving 79% recall at sub-100ms latency
- Implemented Reciprocal Rank Fusion and automated Precision@K/Recall@K evaluation; generated grounded answers with inline citations via Groq API

### Pneumonia Detection | Python, PyTorch, Flask, Docker

Jan. 2025 – Feb. 2025

- Trained a CNN on 5,000 chest X-ray images to detect pneumonia (AUC 0.91) and validated with stratified evaluation splits
- Containerized the model behind a Flask REST API for real-time inference

### BreezyWeather | JavaScript, React, REST APIs

Sep. 2024

- Developed a responsive React SPA consuming the OpenWeather API with client-side caching to reduce redundant API calls
- Implemented input validation, error handling, and a mobile-first UI for reliable searches across devices

## TECHNICAL SKILLS

**Languages:** Java, Python, JavaScript, C/C++, SQL

**Frameworks & Libraries:** Flask, React, PyTorch, Streamlit

**Tools & Cloud:** Git/GitHub, Docker, Linux, Jenkins, pytest, Azure (App Service, SQL, Blob Storage), AWS EC2, CI/CD, Agile/Scrum