Gurnoor Bal

balgurnoor8@gmail.com | (647)-410-6315 | LinkedIn | Github

EDUCATION

McMaster University, Hamilton, ON **Expected Graduation:** 05/2025
Bachelor Of Engineering, *Software Engineering*
Relevant Coursework: Data Structures & Algorithms, Operating Systems, Object-Oriented Programming, Software Design, Databases, Web Programming, Applications of Machine Learning
Honors/Awards/Scholarships: Entry Scholarship, Dean's List, McMaster Honour Awards, Golden Key Award
Certifications: *AZ-900: Microsoft Azure Fundamentals(Udemy)*

SKILLS

Programming Languages: C++, C, Python, JavaScript, Java, Dart, Julia, HTML
Frameworks / Technologies: SQL, Linux, Intellij IDE, VSCode, Verilog HDL, MatLab, MySQL, DB2, Pygame, CSS, ReactJs, NodeJs, Django, QGIS, Flutter, NGINX, Firebase, Git, GitHub, Machine Learning, Azure (Virtual Machines)

EXPERIENCE

Korotu Technology Inc. **Toronto, ON** **05/2023 - 04/2024**
Software Engineer - Full Stack

- Led the development of a premium product using the **Random Forest algorithm** and satellite data (Sentinel-1, Sentinel-2, GEDI, ICESat) for carbon-mass estimates across Canada. Built the solution with **Python** and **Django** backend and **HTML/CSS** front-end, showcasing strong full-stack development skills.
- Organized bi-weekly sprints, defined team workflows, and ensured task allocation and delivery, driving collaboration and timely completion of a data-driven environmental project. Leveraged **leadership** in managing cross-functional teams and project timelines.
- Created user-centered UI designs in **Figma** and refined them through iterative feedback loops. Streamlined the design-to-development handoff process, improving workflow efficiency and reducing rework by **20%**.
- Developed a GIT-based version control strategy, implementing a branching system and code reviews that reduced merge conflicts by **30%**. Improved collaboration and code quality, accelerating feature rollouts.
- Led **Azure** resource management and **UNIX** administration at Korotu Technology, optimizing cloud resources and implementing **SSL** certification on **NGINX** servers. Improved cost efficiency and ensured seamless **server security**.
- Integrated a feature displaying tree canopy heights using NASA's GEDI data, built with **Python** for backend processing and **HTML/CSS** for front-end visualization. Enhanced environmental analysis through precise, actionable data insights.
- Implemented a Random Forest model using **scikit-learn**, leveraging satellite **GIS** data (Sentinel-1, Sentinel-2, GEDI) to estimate tree canopy heights. Applied data preprocessing, feature engineering, and model evaluation for accurate environmental insights.

PROJECTS

ChestScan AI Diagnostic Tool | Python, PyTorch, Web Dev
Sept 2024 - April 2025

- Developing a **CNN** for automated chest X-ray diagnostics, leveraging CheXpert and MIMIC datasets for high accuracy.
- Implementing a secure, web-based interface for diagnostics and heatmap visualization.
- Ensuring regulatory compliance through hazard analysis and technical documentation.

TripTogether | *Dart*

- Developed a carpool app for a fictional taxi service during a 2-day sprint.
- Integrated **Firebase** authentication and real-time database for secure user management and live trip pairing.
- Implemented **Google Maps API** for location autocomplete and QR code scanning for easy user onboarding.
- Designed an interactive map interface to display user locations and dynamically update fare as new riders join

Self-Driving Highway Simulation | Python

- Engineered a Python-based highway simulation with self-driving vehicles, emphasizing energy efficiency and top-tier safety.
- Boosted traffic flow by **26%** through strategic optimizations.
- Oversaw the creation of a 30-page technical engineering report to fulfill design requirements.

ADDITIONAL INFORMATION

Languages: English(Native), Punjabi(Native), Hindi (fluent), Urdu (fluent)
Extra-Curriculars: Active in basketball and soccer intramurals; founded a student-focused run club **(@289.runs)** to promote fitness and local engagement among peers.