Mohamad Ghanem

613-404-9130 | mgahmad.gh@gmail.com | linkedin.com/in/mohdgh | github.com/mghanem4 | mohamadghanem.me

Education

Bachelor of Science in Computer Science, Carleton University Sep 2023 - Present

Concentration in Artificial Intelligence and Machine Learning, Minor in Statistics, Business

Fourth Year Standing, CGPA: 11.15/12 - (A+).
Expected Graduation Date: April 2027.
Academic Awards: Dean's Honor List (4x), Award of Excellence, President's Scholarship.
Co-op Availbility: Available for 4 months, 8 months, 12 months.

Skills

Languages: Python (PyTorch, Pandas, Scikit-learn, XGBoost), SQL, Java, C/C++, R, JavaScript/TS.
Tools: Git, Docker, Power BI, Power Apps, ArcGIS, Linux/Bash, Jupyter, VS Code.
Concepts: ML/AI Algorithms, Reinforcement Learning, Predictive Modeling, Statistical Analysis, REST APIs.

Experience

Data Scientist / Machine Learning Engineer May 2025 – Present

Carleton University (Department of Advancement) *Ottawa, ON*

- Architected a hybrid pipeline using Logistic Regression for propensity and XGBoost Regressor for gift estimation, utilizing automated feature selection to increase training speed by 40%.
- Developed ETL pipelines to transform raw data for model consumption and optimized complex SQL workflows to connect live databases with Power BI.
- Engineered an $O(N + M)$ data-matching algorithm to reconcile 1M+ records in less than 3 seconds, reducing manual processing by 90%.

Applications Developer (Projects Assistant) May 2023 – May 2025

Carleton University (Department of Advancement) *Ottawa, ON*

- Developed award-winning leave application system used by **50+ users** including directors of university, optimized app performance.
- Engineered an ETL pipeline using SQL to preprocess data for Power BI consumption, reducing report refresh times by 90%.
- Automated the leave-request process using Power Automate and Power Apps, reducing manual data entry by **50%**, cutting processing time by **45 minutes**, and improving data accuracy.
- Utilized Pandas to clean large datasets, saving **60 hours/month** of manual review time.
- Utilized PHP along with HTML/CSS for PDF formatting and email design, significantly reducing paper usage by **50%** and enhancing digital communication and speeding up communication by **63.8%**.

Program Supervisor Jan 2024 – Present

Carleton University (Department of Advancement) *Ottawa, ON*

- Manage shift operations, technical troubleshooting, and personnel training for the Telephone Outreach Program.

Career Awards & Certifications

Prix d'Excellence (CCAE) 2024

Bronze Award for Best Initiative of Advancement Services across Canadian Higher Ed. *Ottawa, ON*

Service Excellence Award Nominee (Carleton) 2023

Nominated for Best Innovative Change Initiative, selected from over 2,000 employees. *Ottawa, ON*

Certifications: IBM Git & GitHub, IBM Linux & Shell Scripting, IBM Intro to Software Engineering.

Projects

Hybrid Monocular Distance Estimation using CNN + Pinhole Residual | *Python* 2025

- Built a lightweight multi-output, using ResNet-18 backbone and a custom 4-block CNN to estimate object distances by learning the residual correction for a pinhole camera physics baseline. MAE of 1.03 and R square of 99%.

Dungeon Escape Reinforcement Learning (DQN vs. PPO) | *Python* 2025

- Developed and evaluated DQN and PPO agents within a custom Gymnasium Dungeon Escape environment that is hyperparameter tuned.
- Engineered a CNN backbone to process 3D tensor state representations, encoding environmental features like walls, weapons, and adversarial threats.

Lead Developer, Leave Application System (Award Winning) | *MS Power Platform* 2023–Present

- Architected an automated end-to-end system for tracking and approvals, **cutting processing time by 85%** and **communication delays by 80%**.
- Engineered filterable dashboards and automated alerts that **reduced manual data entry by 70%**, and led training for department-wide adoption.

Data Cleaning and Geocoding Pipeline | *Python, ArcGIS* 2024

- Processed 182K+ records and optimized geocoding logic, reducing API call usage by 95.56%.