Imad Ahmad

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SUMMARY

Machine Learning Engineer with a deep understanding of the **mathematical foundations of deep learning**, leveraging advanced concepts in optimization dynamics, gradient flow analysis, and custom loss function design. Proven track record of architecting end-to-end deployments for **mission-critical data infrastructure**, scaling production models to handle millions of daily records with 99.9% availability. **Published statistical researcher** who combines rigorous software engineering best practices with advanced theoretical knowledge to build robust, high-performance systems for complex environments.

EXPERIENCE

TELUS Communications Inc. **October 2024 – Present**

Machine Learning Engineer, ***July 2025 - Present***

- Designed, trained, and deployed a **PyTorch**-based **deep learning** churn model on a **large-scale customer dataset** (millions of records), engineering **custom loss functions and optimization routines** to improve predictive accuracy, and delivering insights leveraged by **director-level leadership** to support proactive retention strategies and reduce churn by 5–10%.
- Demonstrated deep understanding of **neural network architecture** by analyzing **gradient flow**, optimization behavior, **activation dynamics**, and **loss-function design** to significantly **enhance model accuracy** and robustness of existing models.
- Processed **1M+ daily records** by engineering robust **Kubeflow pipelines in Python** on GCP Vertex AI, optimizing deployment workflows, integrating automated error alerting, and providing daily predictions to stakeholders.

Data Engineer, ***October 2024 – July 2025***

- Spearheaded a cross-functional migration initiative involving multiple engineering teams to execute a **zero-downtime** transition of **100+ mission-critical ETL pipelines** to Google Cloud Composer, meeting SLAs for **99.9% data availability**.
- Architected and led the QA automation strategy for the **Telus-WestJet strategic partnership**, designing **Python-based data validation pipelines** that reconciled cross-company architectures and guaranteed **99.99% accuracy** in high-volume customer identity synchronization.
- Designed a **modular DAG generation framework** within Cloud Composer using **Python** and custom operators, allowing teams to deploy configuration-based pipelines without writing repetitive boilerplate code.

LifeLabs Inc. **August 2021 – July 2022**

Laboratory Data Assistant, ***August 2021 – July 2022***

- Designed and deployed 15+ complex **Apache Airflow DAGs** to automate **critical ETL pipelines**, integrating **CI/CD workflows** to ensure version-controlled releases and system reliability—reducing overall data processing time by 40%.
- Optimized daily extraction and transformation of **1,000+ COVID-19 test records** by developing **high-performance SQL queries** and implementing real-time visibility via **Prometheus** metrics and **Grafana** dashboards, improving operational reliability and decision-making.

EDUCATION

Master's of Data Science and Analytics, *University of Calgary* **Graduated December 2023**

Bachelor of Science in Integrated Science, *University of British Columbia* **Graduated May 2020**

PROJECTS AND PUBLICATIONS

Doc-Shield – Production Ready SaaS Solution

https://doc-shield.com

- Designed and built "Doc-Shield," a secure web-based document redaction platform leveraging **Google Cloud** (Cloud Functions, Cloud Run, Firestore, GCS) to automatically redact personal information from uploaded documents.
- Led full lifecycle development from concept to deployment, including **backend orchestration**, **CI/CD integration**, **UX optimization**, and branding strategy, resulting in a **production-ready SaaS solution**.

Master's Degree Final Project – Recycling Image Classifying Robot

https://youtu.be/s5CwtBsv_bo

- Developed a **Convolutional Neural Network** in **TensorFlow** that classifies waste images with **85% accuracy**.
- Managed and analyzed over 10,000 labeled waste images with **Python** and the **OpenCV** library, sourced from **Kaggle** datasets and web scraping with **Selenium**, to utilize for training.
- Integrated the model into a **Raspberry Pi robot**, enabling real-time waste classification and demonstrating the model's practical application in dynamic environments.

Academic Statistical Research (Published) – Exploring the Gender Disparity in Physiology Departments

https://pubmed.ncbi.nlm.nih.gov/33409087/

- Utilized advanced statistical methods in **Python** and **R** to explore the gender disparity in Physiology departments for over 2000 faculty members, contributing valuable insights into diversity dynamics within academic settings.
- Authored and **successfully published** research in a peer-reviewed journal as the **first author**, demonstrating proficiency in scientific communication and scholarly writing.

CERTIFICATIONS

GCP Cloud Digital Leader • 2024

https://www.credly.com/badges/72caaec7-b019-4bc1-a2e0-c7f2ad21b16a/public_url

AWS Certified Cloud Practitioner • 2023

https://www.credly.com/badges/22444eaa-2cfa-4a7d-ade2-4608ca8922a0/public_url