Ali Goldani

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Machine Learning Engineer with **over 3** years of experience in designing, building, and deploying **Software** and **AI** solutions across products. Experienced in cutting-edge **ML/DL**, **Generative AI**, **Natural Language Processing**, and **LLM** frameworks.

SKILLS

Programming	Python, Java, Node.js, C/C++
AI/ML	PyTorch, PySpark, Scikit-learn, Transformers, Autoencoders, LLMs (RAG agents, tools, evaluation, fine-tuning, deployment), BERT, OpenAI, Llama3, LangChain Toolbox, LlamaIndex, Mistral, Data Engineering (ETL, Analysis, Visualization)
Software	SQL, NoSQL, Vector DBs, Pandas, NumPy, Matplotlib, Seaborn, Tableau, RESTful API Design, Object Oriented Programming, Design Patterns, Algorithm Design, Unit testing, Profiling, CI/CD pipelines, Agile Framework
Technologies	Git, Jira, Docker, Kubernetes, AWS, GCP, Azure, Vast.ai
Languages	English (Fluent), Persian (Native)

WORK EXPERIENCE

Hub for Neuroengineering Solutions   McGill University, Montreal, QC
Machine Learning Engineer   Jan. 2024 – Present

- Deployed light weight **detection**, **tracking**, **pose-estimation**, and **segmentation** models for neuroscience laboratories.
- Integrated **Depth Estimation** models with **Segmentation**, **Vision Language Models**, and **Vision Transformers** for landmark detection.
- Designed an **RAG**-based chat bot using **LangChain**, **LangSmith**, and **OpenAI** API to help researchers in the analysis of behavioral data.
- Deployed **containerized ML workflows** using **Python**, **PostgreSQL**, and **CI/CD pipelines** to facilitate model training on GPU clusters.
- Worked on implementing features on our **Django** backend server to serve the AI models and establish seamless **data flow**.
- Implemented a robust **ETL** system to handle transfer of **terabytes** of data daily between our product resources.

Canadian Centre for Behavioral Neuroscience (CCBN)   University of Lethbridge, Lethbridge, AB
Machine Learning Researcher   Jan. 2022 – Dec. 2023

- Trained **neural networks** for pose-estimation using **PyTorch** with **synthetic data** utilizing a custom data generation pipeline reaching to up to 90% accuracy and cutting labor costs and time by 80%. Worked with **Neural Radiance Fields (NeRF)**, **Variational Autoencoders (VAE)**, and **Diffusion Models** for generating synthetic data.
- Designed and developed a test delivery software for subject evaluation using **Unity Engine (C#)**, **Android Studio (Java)**, and **Arduino (C)**. Developed extensions for Raspberry Pi using **Python** with **multithreading** and **PyQT** reducing experiment time by **50%**.
- Mentored groups of students at Introduction to **Data Science** Workshop held by Campus Alberta for two years.

PART Financial Data Processing   Mashhad, Iran
Software Engineer   Jul. 2019 – Jan. 2020

- Optimized key libraries for data aggregation in **PostgreSQL**, reducing runtime by over **50%**. Proposed method replaced libraries in use.
- Developed a To-Do web app using **Express.js** with **Unit Testing**, **REST API documentation**, and **CI/CD** using **GitHub Actions** and **Heroku**.

Artronics Game Studio   Mashhad, Iran
Software Engineer   Sep. 2017 – Jun. 2019

- Developed the back-end of a mobile app consisting of **REST API** endpoints with **Express.js** and complex in-database **SQL** functions.

PROJECTS

Virtual Mirror | Multithreaded Python, Google MediaPipe, Flask, OpenCV, DLib | GitHub   Mar. 2021 – Sep. 2021

- Developed and integrated an algorithm to accurately detect facial features for 3D virtual cosmetic try-ons.
- Implemented multi-threading and optimized the pipeline to achieve above **30 fps** real-time output.

Better Exam | Python, Flask, JavaScript, Bootstrap, Azure Cloud | GitHub   Oct. 2020 – Jan. 2021

- Built a web app to assist visually impaired students in exams using **Azure NLP** services. It ranked **top 50** in Azure AI Hackathon 2021.
- I worked on designing the automatic speech recognition (ASR) and developing the backend.

AWARDS

Business Plan Competition 1st place | University of Lethbridge School of Graduate Studies	May 2023
Alberta Innovates Scholarship | University of Lethbridge School of Graduate Studies	Jan. 2022

EDUCATION

Master of Science - Neuroscience – University of Lethbridge, AB, Canada – GPA: **4/4**	Jan. 2022 – Dec. 2023
Bachelor of Science - Computer Engineering – Ferdowsi University of Mashhad, Iran – GPA: **17.25/20**	Sep. 2016 – Sep. 2021