

MARYEM FATIMA

Software Engineer

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• Work Permit (B)

Summary

Software Engineer with 6+ years building scalable backend systems, recently specialized in applied large language models. Completed a Master's focused on LLM fine-tuning and evaluation, with hands-on experience in QLoRA/LoRA, prompt engineering, and benchmarking across multiple open-source and proprietary models. Combines production engineering depth (TypeScript, Node.js, Python) with practical AI research to build reliable, AI-powered products.

Experience

Peerdom Bern, Switzerland
Software Engineer 04/2023 - Present

- Designed scalable backend architecture using TypeScript (Node.js), focusing on clean modular service boundaries
- Integrated OpenAI LLMs to automate resource creation, reducing delivery time from minutes to seconds
- Built an HTTP MCP (Model Context Protocol) server that registers REST APIs as typed, LLM-callable tools, letting any MCP-compatible AI client perform multistep organization management tasks from natural language
- Built and maintained incoming webhook pipelines for external system integrations
- Led system design discussions, contributed to architectural decisions, and reviewed code for maintainability and performance
- Developed RESTful APIs and internal tooling to support AI-powered product features with minimal latency


Motive Islamabad, Pakistan
Application Software Engineer 11/2019 - 02/2022

- Core engineer on an ELD (Electronic Logging Device) compliance platform for US and Canadian fleets, building Hours of Service (HOS) logging and PDF report generation in Ruby on Rails.
- Helped extend the platform from US-only FMCSA compliance to also support Canadian HOS rules (Transport Canada / SOR/2005-313), implementing a second rule set for logging, violation detection, and reporting.
- Delivered ongoing feature development across the product lifecycle, translating evolving federal regulations into production logic.
- Wrote unit and functional tests for CI pipelines, improving release reliability, and provided on-call support for live production issues.

An10 Islamabad, Pakistan
Application Software Engineer 06/2018 - 11/2019

- Built and shipped RESTful APIs using Express.js and Total.js, with Sequelize as the ORM across both MongoDB and MySQL.
- Integrated the Elasticsearch Document API to power fast, ad-hoc queries over large-scale IoT sensor data, adapting to evolving user requirements.
- Designed the security and authorization layer for our APIs using JWT and access control lists (ACLs).
- Wrote Node.js services to work with Apache Zookeeper, Redis, and Kudu.
- Set up unit and functional testing pipelines (Jest, Mocha, Chai) and CI/CD pipelines in GitLab, and managed sprint work through the GitLab Issue Board.
- Broke application components into Dockerized microservices for cleaner deployment and scaling.
- Integrated the Camunda workflow engine with external applications to automate enterprise processes visually.

Education

 University of Basel (<https://www.unibas.ch>) Switzerland
Master's in Computer Science (part-time) 2022 - 2026

- **Tech:** *Prompt Engineering, Fine-tuning, Python, PyTorch, DeepSeek, Mixtral, Llama, Hugging Face Transformers, LangChain, CUDA, A100*
- **Thesis:** *Privacy policy analysis using LLM*
- Built a classification system to detect third-party data disclosures across 13 personal-information types in privacy policies
- Benchmarked LLMs (DeepSeek, Mixtral, Llama, Gemini, Grok) across two datasets, shortlisting the 5 strongest for deep evaluation
- Ran ablation studies on temperature, few-shot count, and prompt design; found structured output and low temperature most reliable
- Fine-tuned open-source models with QLoRA/LoRA, improving Mixtral by +0.15 to +0.26 F1 across categories (0.53 → 0.70 on cookie-tracking detection)

 National University of Sciences and Technology Islamabad, Pakistan
Bachelor's in Software Engineering 09/2014 - 06/2018

- Islamabad

TECHNICAL SKILLS

AI/ML SKILLS:

LLM Integration · Prompt engineering · Model Context Protocol · Fine-Tuning · SFT · PEFT · LoRA · QLoRA · Structured Output · LLM Evaluation & Benchmarking · Hugging Face Transformers · PyTorch · LangChain · VLM · OpenAI API · Vertex AI · Gemini · Grok · Llama · Mixtral · DeepSeek

Programming language skills: TypeScript · JavaScript · Ruby · Python · Java · c · c++

Database management skills: Elasticsearch · SQL · MongoDB · MySQL · Kudu · Redis · PostgreSQL · Zookeeper · Neo4j

Tools:

Visual Studio Code · Camunda Modeler · Insomnia · Robo 3T · NetBeans · MongoDB Compass · MySQL Workbench · Android Studio · Git · GitLab CI/CD · Docker · Swagger · Postman · Kibana · Confluence · Jira · OpsGenie · Rollbar · Datadog · Redash · Cursor