Mohammad Jalili

Software Engineer (Backend / Applied ML) | Lincoln, NE, United States

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PROFESSIONAL SUMMARY

Software Engineer (M.S. Computer Science) specializing in scalable, production-grade systems and applied ML. Experienced in designing reliable APIs, optimizing data pipelines, and deploying LLM-based solutions that drive measurable user outcomes.

EDUCATION

Master of Science in Computer Science | Jan 2024 - Dec 2025

University of Nebraska-Lincoln, NE, United States

Bachelor of Science in Computer Engineering | Sep 2016 - Sep 2020

K. N. Toosi University of Technology, Tehran, Iran

WORK EXPERIENCE

Software Engineer, University of Nebraska-Lincoln, Jan 2024-Present | NE, United States

- Developed Python and Java services for automated classification of software vulnerabilities, processing hundreds of CVE/CWE records daily.
- Built and maintained robust data pipelines for CVE, CWE, and CVSS datasets, enabling reliable model reasoning over large-scale security data.
- Implemented automated testing and evaluation workflows, improving vulnerability classification accuracy and consistency by 20%.
- Integrated LLM-based models into production-style workflows with prompt engineering and fine-tuning, balancing latency, cost, and performance.
- Collaborated with research and engineering teams to bridge ML research and real-world security applications.

Software Engineer – Web Platform, Arzyaban Salamat Pars Co., Apr 2022-Jul 2022 | Tehran, Iran

- Designed and developed production-ready backend services, data models, and APIs for internal web applications supporting operational workflows.
- Implemented database schemas and backend logic using ASP.NET and relational databases, improving data reliability and query performance.
- Contributed to deployment and release workflows, increasing system stability and maintainability.
- Collaborated with cross-functional teams to deliver features on schedule in a fast-paced environment.

Software Engineer – Mobile Platform, Ertegha Salamat Pasargad Co., Jul 2020-Aug 2020 | Tehran, Iran

- Developed two Android applications for internal staff and partner centers, implementing core features in Java.
- Streamlined operational workflows for insurance services, improving internal efficiency.

Software Engineer – Mobile Platform, Ayandeh Sazan Publications, Oct 2018-May 2020 | Tehran, Iran

- Built and maintained an Android app delivering personalized study plans for high school students.
- Integrated data-driven adaptive logic to tailor study schedules based on user behavior and inputs.
- Focused on usability, performance, and maintainability to support 10,000+ active users.

Founding Software Engineer – SeedS/Lexeen Startup, Oct 2016-Oct 2019 | Tehran, Iran

- Developed applied software engineering programs covering neural network fundamentals and Android app development.
- Mentored small teams to deliver Java-based Android applications in real-world use cases.
- Built production-ready apps and programs emphasizing practical implementation.

Software Engineer Intern – Sarmad Insurance, Jul 2019-Sep 2019 | Tehran, Iran

- Developed an Android app to calculate insurance premiums by implementing the company's business rules.
- Collaborated with domain experts to ensure accurate and maintainable application logic.

SKILLS

+ **Programming:** Python, Java, Bash script

+ **Backend:** FastAPI, REST API, Asynchronous Programming, Background Task Processing (Celery), JWT Authentication & Authorization, API Security & Middleware, Dependency Injection

+ **Database & Storage:** SQL (MySQL), NoSQL (MongoDB), Async MongoDB (Motor), Schema Design & Indexing

+ **Cloud computing & DevOps:** AWS, Git, Docker, CI/CD, Redis (Message Broker), Environment-Based Configuration, Service-Oriented Architecture

+ **Software Engineering:** Backend development, System design, Object-Oriented Programming (OOP), Software vulnerability management, Selenium

+ **Software Testing & Reliability:** Unit testing, TDD, Test automation, Debugging, Profiling

+ **Machine Learning:** Model Training & Evaluation, Feature Engineering, Model Deployment

+ **LLM & NLP:** LLM Integration in Backend Services, AI Inference & Task Orchestration, LangChain, RAG, Prompt Engineering, Fine-tuning, Chain-of-thought, Few-shot learning

RECENT PROJECTS

TICKETIFIER –AI-Powered Support Ticket Backend

- Designed and implemented a production-grade, containerized backend architecture using FastAPI, MongoDB, Redis, and Docker Compose, enabling scalable REST APIs and clean service separation.

- Built an asynchronous task processing pipeline with Celery + Redis, offloading long-running AI workloads from the API layer to improve performance, reliability, and user experience.
- Integrated LLM-powered ticket analysis using LangChain, providing automated ticket summarization, categorization, and AI-generated response suggestions via background workers.

  Python FastAPI MongoDB Celery Redis LLMs LangChain Docker

ASSERTIFY – LLM-Based Production Code Assertion Generator

- Developed a Python-based system that generates code assertions for production software, integrating LLM pipelines into automated workflows.
- Leveraged few-shot learning and prompt engineering to reduce manual testing effort and improve code reliability.
- Designed modular, reusable components for production-grade integration with CI/CD pipelines.

  Python Java LLMs Prompt Engineering Data Pipelines OOP Git REST

ASTA – Adaptive Edge-Cloud Inference System for Low-Latency Voice Commands

- Built an edge-first voice-to-action system combining ASR, LLM reasoning, and rule-based routing for low-latency command execution.
- Optimized edge-cloud inference pipeline for performance and scalability.

  Python LLMs ASR Data Pipelines Git Prompt Engineering

CASEY – LLM-Based Software Vulnerability Identification and Assessment

- Developed a Python-based system that analyzes source code to classify CWE types, assess severity, and generate vulnerability reports using LLM pipelines.
- Designed modular, production-ready pipelines to automate vulnerability detection and reporting.
- Improved accuracy and coverage of vulnerability classification compared to baseline static analysis tools.

  Python OOP LLMs Prompt Engineering Data Pipelines Git Vulnerability Management REST

Stu-Assist – GPA/ECTS Conversion & Application Platform

- Contributed to a volunteer-built web platform helping international applicants convert GPA/ECTS scores and share application experiences.
- Developed REST APIs and backend logic with PHP, ensuring reliability and scalability for multi-user access.

  REST OOP Git PHP CI/CD Backend Services React

CERTIFICATIONS

Neural Networks and Deep Learning, 04/01/23, Coursera
Introduction to Cloud Computing, 12/01/22, Coursera
Python for Data Science, AI & Development 12/01/22, Coursera

REFERENCES

Will be provided upon request.