

Sajjad Fani

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Research Interests

- Clinical AI & Decision Support
- AI-Enabled Software Systems
- Reliable & Robust Large Language Models
- Distributed Systems, MLOps & Cloud Infrastructure

Education

Islamic Azad University

2025 - Present

M.Sc. Artificial Intelligence

Thesis: *Decision-Boundary Robustness in Tool-Using Clinical LLMs: A Counterfactual Benchmark in Clinical Toxicology*

Selected graduate coursework: Machine Learning (17/20), Deep Learning (17/20), Image Processing (16/20)

Quchan University

2020 - 2025

B.Sc. Computer Engineering

GPA: 16.37 / 20

Research Experience

M.Sc. Thesis - Clinical LLM Robustness & Evaluation

Islamic Azad University | Sep 2026 – Present

Clinical Advisor: Omid Mehrpour, MD, FACMT — Florida/USVI Poison Information Center – Jacksonville, FL, USA

- Designing a counterfactual benchmark using minimal clinical case pairs in which one decision-relevant variable changes while the remaining context is held constant.
- Evaluating whether tool-using LLM agents recognize clinically meaningful decision boundaries, avoid unsafe use of invalid outputs, and select correct next-step routing.
- Building structured, machine-readable evaluation outputs and testing runtime safety guards under source-grounded clinical toxicology oracles.

Relevant Professional Experience

Medical Toxicology - Tucson, Arizona, USA

Aug 2023 – Present

Software Engineer (Backend / DevOps Lead)

- Lead backend and AI systems development for clinical toxicology services, bridging healthcare requirements with production software systems.
- Design and maintain APIs, asynchronous processing pipelines, and deployment infrastructure using Django/DRF, Redis, PostgreSQL, Docker, and CI/CD.
- Designed and built ToxLumen end-to-end, integrating LLM-based workflows for transcription, structured extraction, analysis, and clinical documentation.

Teaching Experience

Quchan University

- **Basic Programming (C)**
Spring 2022
[Instructor: Dr. Malihe Javidi](#)
- **Advanced Programming (C++)**
Autumn 2023
[Instructor: Dr. Zahra Eskandari](#)

Islamic Azad University

- **Machine Learning**
Autumn 2025
[Instructor: Dr. Yahya Forghani](#)

Responsibilities included preparing exercises, grading, holding Q&A sessions, and mentoring small student groups.

Relevant Coursework

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|---|---|
| • Fundamentals of Internet of Things (20.00/20) | • Algorithm Design (18.75/20) |
| • Network Security (18.50/20) | • AI Fundamentals & Applications (19.25/20) |
| • Web Programming (20.00/20) | • Principles of Compiler Design (17.75/20) |
| • Software Engineering I (20.00/20) | • Applied Linear Algebra (18.85/20) |

Selected Projects

ToxLumen — AI-Enabled Clinical Toxicology Platform

Medical Toxicology | Sole Developer — Full-Stack & AI Systems

- Designed and built ToxLumen end-to-end from the ground up, including system architecture, backend services, AI workflows, data models, asynchronous processing, and production deployment.
- Developed multimodal case-intake workflows supporting typed text, recorded audio, uploaded files, and live-call transcription.
- Built asynchronous pipelines for transcription, structured data extraction, AI-assisted analysis, and downstream case processing using Django/DRF, Huey, Redis, and PostgreSQL.
- Integrated LLM-based services into clinical workflows with auditable outputs, deterministic processing for safety-critical calculations, and structured case-centered documentation.
- Evolved the original MedSpeech concept into a broader production platform for toxicology documentation, analysis, guidance, and clinical workflow support.

Tech: Python, Django, DRF, Huey, Redis, PostgreSQL, Docker, LLM APIs, React.js

FaceCheckIn

Edge-to-Cloud IoT Attendance System with Face & Emotion Inference

Course Project — Fundamentals of IoT | Team of 4 | Backend & Integration Lead | Full Marks

- Designed and implemented the backend using Django and PostgreSQL, including identity, attendance, analytics, JWT authentication, RBAC, and secure API access.
- Built the edge-to-cloud integration pipeline between Raspberry Pi devices, backend services, and mobile/web clients through REST APIs.
- Integrated face-recognition and emotion-inference workflows, storing structured inference results for downstream analysis.
- Containerized the backend with Docker and evaluated end-to-end prototype performance, achieving approximately 1s for identity recognition and 2–4s for emotion inference.

Tech: Python, Django, PostgreSQL, Docker, REST APIs, Raspberry Pi

Technical Skills

Programming: C/C++, Python, JavaScript, Go, Dart

Backend: Django, Django REST Framework, FastAPI, Flask, Node/Express, Nest.js

Frontend: React.js, React Native, Flutter

Cloud/DevOps: Docker, Docker Compose, GitLab CI/CD, Linux

Data & Messaging: PostgreSQL, MySQL, Redis, RabbitMQ, Celery

Artificial Intelligence: Machine Learning, Deep Learning

Languages

Persian - Native

English - Advanced