NEGAR SHOJAEI

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English | Swedish | Born in 1997

SUMMARY

Innovative AI & Software Engineer with a Master's in Artificial Intelligence and Robotics, and extensive experience building scalable machine learning systems and cutting-edge AI solutions. Proven track record in designing, deploying, and optimizing large-scale software and LLM-based applications, bridging the gap between advanced AI research and production-ready systems. Passionate about delivering high-impact solutions that serve millions of users, while continuously pushing the boundaries of AI and software engineering.

Education

Artificial Intelligence and Robotics — 2022-2025

M.Sc. in Artificial Intelligence and Robotics, Persian Gulf University

- GPA: 16/20
- Thesis: Diagnosis of Pharyngitis Type Using Smartphone Images
- Coursework: Machine Learning, Deep Learning, Image Processing, Pattern Recognition, Artificial Intelligence, Natural Language Processing, Reinforcement Learning, Multi-Agent Systems, Data Mining, Algorithms Design (Supervisor)

Computer Engineering — 2015-2019

B.Sc. in Information Technology, Shahrekord University

- Relevant Coursework: Python, Java, Android, C++

Experience

Machine Learning | Day Insurance |Tehran | Iran — Apr2025-Present

• Designed and deployed advanced AI systems for insurance fraud detection, including a duplicate medical invoice detection system to automatically identify repeated claims, significantly reducing fraudulent payouts.

• Developed AI-powered vehicle damage assessment systems capable of evaluating minor car damages from images, automating claims processing and eliminating the need for manual assessors for routine cases.

• Built anomaly detection and predictive fraud scoring models to identify suspicious medical and auto claims and prioritize investigations.

• Implemented risk scoring and predictive models for clients, enabling data-driven underwriting, dynamic pricing, and proactive risk management.

• Designed automated document processing pipelines using OCR and NLP to extract key information from invoices, contracts, and claim forms.

• Created predictive models for portfolio optimization, claim forecasting, and resource allocation, increasing operational efficiency and reducing cost.

• Collaborated with cross-functional teams to translate business requirements into scalable, production-ready AI solutions.

• Optimized model performance with feature engineering, hyperparameter tuning, continuous monitoring, ensuring accuracy, reliability, and measurable cost savings.

AI Researcher | Persian Gulf University | Bushehr | Iran 2022-2025

- Conducted advanced research in Artificial Intelligence, focusing on Machine Learning and Deep Learning applications in healthcare, particularly in diagnostic systems.

- Collaborated with Bushehr Nuclear Medicine Hospital under Dr. Majid Asadi on projects for lymph node cancer detection, contributing to clinical-grade diagnostic model development as part of my thesis.

- Worked in Dr. Habib Rostami's laboratory, applying state-of-the-art image processing and deep learning techniques to medical imaging datasets.

- Collaborated with University of Tokyo, Harada-Kurose-Mukuta Lab, under Prof. Yusuke Mukuta, on projects related to pharyngitis detection and throat inflammation diagnosis.

- Developed AI Doctor Pharyngitis, an application for automated throat inflammation diagnosis using deep learning models.

- Applied advanced techniques including CNNs, U-Nets, and transfer learning for segmentation, classification, and detection tasks in medical imaging.

- Served as Teaching Assistant in Dr. Ahmad Keshavarz Image Processing course, mentoring students on practical AI applications in healthcare.

- Participated in cross-disciplinary projects to translate research into deployable diagnostic AI tools, bridging AI research and clinical applications.

Machine Learning | Parisian petroleum | Lamerd | Iran 2021-2024

- Developed an HSE monitoring system for the refinery, capable of detecting hazardous situations and safety violations in real-time, designed to be embedded on quadcopters for automated inspection.

- Built predictive maintenance models to detect equipment failures and component anomalies, reducing downtime and optimizing operational efficiency.

- Designed data pipelines for collecting, cleaning, and analyzing sensor and operational data from refinery machinery.

- Applied advanced machine learning techniques including anomaly detection, time-series analysis, and predictive modeling to forecast equipment malfunctions.

- Collaborated with engineering teams to integrate AI solutions into operational workflows, enhancing safety, reliability, and productivity.

- Optimized model performance through feature engineering, hyperparameter tuning, and continuous evaluation, achieving production-ready accuracy.

Software Engineering | Caspian | Shahrekord | Iran 2017-2020

- Designed, developed, and maintained web and desktop applications using Python, Java, and SQL to support internal business processes.

- Implemented backend systems, APIs, and database solutions for multiple projects, ensuring reliability and scalability.

- Participated in the full software development lifecycle, including requirement analysis, coding, testing, deployment, and maintenance.

- Collaborated with cross-functional teams to deliver high-quality software solutions aligned with business needs.
- Introduced coding best practices, code reviews, and version control using Git to improve team efficiency and maintainability.
- Developed automation scripts and tools to simplify repetitive tasks and improve workflow efficiency.
- Gained hands-on experience in software architecture, debugging, and performance optimization, laying the foundation for advanced engineering skills in AI and ML projects.

Publications & Ongoing Research

- [Published] N. Shojaei, H. Rostami, M. Barzegar, et al. "A publicly available pharyngitis dataset and baseline evaluations for bacterial or nonbacterial classification." Scientific Data, 2025. [DOI]
- [Published] N. Shojaei, A. Behrouzi, H. Rostami, et al. "Deep Learning Automated Differential Diagnosis of Pharyngitis using Smartphone Camera." AIDSAI Conference, Bushehr, Iran, 2024. [DOI]

Under Review:

- [Submitted – Under Review] N. Shojaei, H. Rostami, et al. "Automatic Pharyngitis Type Detection Based on Throat Images with Uncertain Labels." Nature Publishing Group UK.

Skills

Full-Stack Development: HTML5 | CSS3 | JavaScript (ES6+) | TypeScript | React | Next.js | Redux Toolkit | Tailwind CSS | REST API Integration | SPA Development | Component-Based Architecture | Responsive UI | UI/UX Fundamentals

Back-End Development: Node.js | Express.js | FastAPI | Python | RESTful API Design | Authentication & Authorization (JWT, OAuth2) | Microservices | Async Programming | API Security | Input Validation | Error Handling | MVC | Clean Architecture

Databases & Data Layer: PostgreSQL | MySQL | MongoDB | Redis | SQL Analytics | Query Optimization | Data Modeling | ORM (Prisma, SQLAlchemy) | Indexing | Transactions | Caching Strategies | MetaBase & SQL Reporting

Cloud, DevOps & Deployment: Docker | Kubernetes | Linux | CI/CD Pipelines | Nginx | Containerized & Scalable Systems | Production-Ready Applications | Automation Pipelines | Monitoring & Performance Optimization | Model & Service Deployment

Programming, AI & Data Science: Python | Java | MATLAB | R | Kotlin | Bash | Image Processing | Machine Learning | Deep Learning | Computer Vision | NLP | Large Language Models (OpenAI, Hugging Face, Claude, Gemini, LLaMA) | Neural Networks (MLP, CNN, RNN, LSTM, U-Net) | Scikit-learn | PyTorch | TensorFlow | Keras | Pandas | NumPy | Matplotlib | NLTK | Predictive Modeling | Anomaly Detection | Risk Scoring | Fraud Detection | Predictive Maintenance | Feature Engineering | Hyperparameter Tuning | Model Evaluation | Forecasting | Portfolio Optimization

Data & Analytics Platforms

MetaBase | SQL Analytics | Data Preprocessing | Dashboarding & Reporting | Decision Support Systems

Quality, Collaboration & Agile: Git | GitHub | GitLab | Jira | Scrum | Kanban | Confluence | MSP | Code Review | Unit & Integration Testing | Clean Code | Cross-Functional Collaboration

Networking, Systems & IoT: CCNA | CISCO | Network Administration | Routing & Switching | Firewall Management | Embedded Systems | IoT Integration (Quadcopter HSE Monitoring)

Profile Summary (Resume Headline): Full-Stack & AI Engineer — React, Next.js, Node.js, FastAPI, PostgreSQL, Docker, Kubernetes, ML/DL, Computer Vision, LLMs, Networking & Scalable Software Systems