Mobin Shahidi, M.Sc.

Full-stack AI Engineer

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PROFESSIONAL SUMMARY

AI Engineer with **3+ years of experience building ML, NLP, recommender systems,** and **data pipelines.** Brings **4+ years of full-stack** experience and hands-on **product delivery** in a startup. Strong in **Python, FastAPI**, ML modeling, and system design, currently expanding into MLOps, model deployment, and production ML infrastructure.

KEY SKILLS

AI / ML	*Engineering*	*Backend / Frontend*	*Infrastructure*
✓ Recommender Systems	✓ Data Pipeline	✓ Python, FastAPI	✓ Docker
✓ LLM & NLP	✓ Fine-tuning / RAG	✓ JavaScript, HTML / CSS	✓ Git / GitHub
✓ Explainable AI	✓ Performance Evaluation	✓ API Design	✓ CI/CD Pipelines
✓ TensorFlow, PyTorch, PyTest	✓ System Architecture	✓ SQL / Databases	✓ AWS

WORK EXPERIENCE

AI Research Engineer, University of Potsdam, Full-time — *Feb 2024 – Feb 2026*
Project: Recommender Systems for Quality Political News Source — *Potsdam, Germany*

- Built an end-to-end data pipeline in Python (Pandas, NumPy) converting +5M tweets into **41 engineered information-quality signals** for ML modeling and recommendation tasks.
- Implemented reproducible preprocessing and feature extraction workflows with **data validation checks and PyTest-based tests** to ensure dataset consistency and experiment repeatability.
- Trained supervised ML models using Scikit-learn for news source quality prediction using structured training pipelines, cross-validation, and hyperparameter tuning, achieving **0.58 correlation** against NewsGuard benchmark ratings.
- Applied **model versioning and experiment tracking** practices to compare runs and maintain reproducible ML experiments.
- Dockerized ML and recommendation models and deployed them on AWS, implementing performance logging and basic observability to monitor model behavior and pipeline execution.
- Designed a **quality-aware recommender system** that increased the average quality score of recommended news sources by **+3 points** across users while keeping precision unchanged versus baseline.
- Collaborated in a **cross-functional team** and presented experiment results and model performance insights to stakeholders.

Research Assistant, Bu-Ali Sina University, Full-time — *Mar 2023 – Sep 2023*
Project: Explainable Recommendation System — *Hamedan, Iran*

- Designed a large-scale **NLP + recommendation framework** over **151K reviews/ratings (14K users, 8.7K items)** using multi-task learning to jointly model user preferences and generate explainable recommendations.
- Built **text generation and processing pipelines** that produce personalized explanations by combining neural generation models with summarization, sentiment filtering, user-similarity selection, and style-conditioned rewriting.
- Implemented and evaluated neural text generation and personalization models in Python/TensorFlow, achieving **~0.97 semantic similarity** in generated explanations while improving recommendation prediction performance (**MSE 0.992**).

Full-stack Web Developer, Computer Afzar Hamedan (CAH), Co-founder — *Feb 2017 - Jul 2021*
Start-up Project: Cross-Platform Image Management and Privacy Solution (PhotoCans) — *Hamedan, Iran*

- Delivered the full-stack web platform for the commercial launch of a cross-platform image management product serving **100+ users**, using ASP.NET Core, C#, JavaScript, CSS, and relational databases across product, customer, and sales modules.
- Implemented **33 REST API endpoints** and backend services for product operations, licensing, and system integration, improving responsiveness and throughput through asynchronous and non-blocking request handling.
- Designed modular system architecture and database schemas and implemented **12+ business workflows**, adding testing practices that improved application robustness and maintainability.
- Deployed and maintained the production system on IIS infrastructure across multiple releases, resolving operational issues through logging, diagnostics, and structured troubleshooting.

EDUCATION

Master **Artificial Intelligence and Robotics,** Bu-Ali Sina University *Jan 2020 - Jan 2023*

Bachelor **Software Engineering,** Bu-Ali Sina University *Sep 2014 - Jul 2019*

LANGUAGES

Persian: Native **English**: Advanced (C1) **German**: Conversational (B1)

SIDE PROJECTS

News Source Quality Predictor *Jan 2026 – Present*

- Built an ML regression model to estimate news source quality using engineered network and diversity features.
- Packaged and deployed the model as a serverless **AWS SageMaker** endpoint with custom Python inference code.
- Implemented API-based (FastAPI) inference and an interactive UI to generate real-time predictions from tabular inputs.
- Added production-style logging and monitoring with **CloudWatch** for model observability and debugging.

Workflow-Aware AI Assistant for Applications *Nov 2025 – Jan 2026*

- Built a workflow-aware AI assistant integrated into a **Next.js** application, responding based on application state and user action order.
- Implemented backend orchestration, integrating both **OpenAI APIs** and **local LLMs (Mistral)** for controlled and flexible inference, using **LangChain**.

Automated Reddit Scraper for Political Discourse *Jan 2024 - Mar 2024*

- Built an automated **data collection pipeline** to extract subreddit threads, comments, and user interaction data.
- Developed R-based scraping and API workflows to generate large-scale structured datasets from Reddit.
- Implemented **data cleaning and validation checks** to ensure consistency and reliability of text and metadata for downstream analysis.

Deep Learning NLP Recommender System with Reinforcement Learning (Masters' Thesis) *Oct 2021 - Jan 2023*

- Built a deep learning explainable recommender system in **Python (TensorFlow, PyTorch)** trained on 151K reviews/ratings, combining NLP and multi-task learning for personalized recommendations and explanations.
- Implemented neural text modeling pipelines using **RNN, CNN, and transformer-based encoders** for review understanding and explanation generation.
- Applied **reinforcement-learning**–inspired and neural text generation methods to optimize explanation selection and reconstruction, achieving MSE 0.992 in rating prediction.
- Optimized end-to-end training and inference pipelines and executed large-scale model training on **GPUs,** significantly reducing training time and improving experimentation throughput.

PUBLICATIONS

- *Exogenous Cues to Information Quality*
- *Improving News Reliability in Algorithmic Newsfeeds*
- *A Framework for Accurate Recommendations and Explanation Generation Using Multi-Task Learning*

15 Feb 2026, Mobin Shahidi