

Aylin Naebzadeh

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EDUCATION

University of Hull

Jan. 2026 – Jan. 2027

Master of Science in Artificial Intelligence and Data Analysis

- Collaborating with East Riding of Yorkshire Council to develop an end-to-end AI voice agent for automatic classification of telephone calls using the Local Government Classification Scheme, applying NLP and speech AI techniques to unstructured data in a real-world public-sector context.
- Evaluated open-source Audio and Speech LLMs for speech understanding as part of the “Accent Awareness in Open Speech LLMs: A Benchmark on British Isles English” project, analysing model performance regarding accent region and gender groups.
- Developed a federated learning pipeline through the internationally funded OCTOPUS project for environmental monitoring in ports and estuary waters, applying ML and image segmentation to imagery collected by underwater vehicles.

University of Science and Technology

Oct. 2020 – Sep. 2024

Bachelor of Science in Computer Engineering

EXPERIENCE

Software Developer

June. 2026 - Present

Population Data Science, Medical School, Swansea University

Swansea - UK

- Developing a fullstack platform for automated analysis of large-scale research publications and PDF documents to extract information from heterogeneous document data.
- Developing FastAPI REST APIs and integrating them with an existing ASP.NET MVC application, using Docker Compose to deploy and integrate application services within an enterprise research platform.
- Designing data structures and pipelines for organising heterogeneous research data across relational and graph-based databases to support efficient storage, retrieval, and analysis.
- Benchmarked eight open-source LLMs w.r.t. seven metrics using Ollama client and a pipeline of Prompt Eng+MapReduce, and evaluated their ability to automatically extract information from a newly collected dataset.
- Working within an Agile research software environment and communicating progress through regular daily meetings with line and technical managers.

Research Assistant

June. 2023 – Nov. 2025

NLP Laboratory

- Conducted research on large-scale unstructured textual datasets, applying NLP and ML techniques including data preprocessing, feature engineering, and statistical analysis for emotion and sentiment detection.
- Developed a Hybrid RAG approach to extract information from unstructured documents and answer end-user questions, augmented by a knowledge graph.
- Contributed to the development of a transformer-based “Psychological Health Chatbot” by applying NLP and AI techniques to build a digital assistant for conversational interaction.
- Designed, implemented, and evaluated SoTA NLP models and experimental approaches for low-resource languages by analysing model performance and limitations across different datasets and linguistic settings.
- Conducted experiments, analysed and interpreted research findings, and contributed to peer-reviewed publications and presentations at international conferences to communicate technical results to academic audiences.

Backend Developer

July. 2022 – March. 2024

ABDAL

- Designed and implemented scalable backend services using Django REST for large-scale spatiotemporal data analysis.
- Designed, documented, and tested secure REST APIs, applying automated functional and non-functional testing to improve software reliability and quality.
- Led the migration from MySQL to Elasticsearch, improving search performance and supporting large-scale data retrieval.
- Contributed to production software development and Docker-based deployment through code reviews, refactoring, and collaborative development.
- Developed backend APIs supporting interactive data visualisation dashboards for financial data analysis collected from PSP services.
- Worked in an Agile development environment, collaborating with cross-functional teams through planning and progress reviews.

AI Developer Intern

July. 2025 – Sep. 2025

Dadmatach

- Built a seq2seq data processing and text normalization pipeline using open-source LLMs.
- Applied supervised fine-tuning and parameter efficient learning for LLMs to inject domain knowledge for informal to formal text conversion task as part of an open-source toolkit.
- Evaluated model performance w.r.t. quantitative metrics and documented experimental results to support model selection.

Teaching Assistant - Mentorship (Scrum Master/ Product Owner)

Oct. 2021 – July. 2025

IUST, Department of Computer Eng

- Guided students in programming and AI courses, evaluated their performance on projects and assignments, and facilitated workshop sessions.
- Facilitated Agile software projects as Scrum Master and Product Owner, coordinating teams, sprint planning, and requirements.

TECHNICAL SKILLS

Programming: Python (Advanced), C/C++ (Experienced), C# (Intermediate), JavaScript (Intermediate)

ML & AI: PyTorch, TensorFlow, Keras, LangChain, Hugging Face, Scikit-learn, Pandas, NumPy, Matplotlib

Deployment: Docker, Kubernetes, Git, Azure DevOps, CI/CD, Linux

Databases: PostgreSQL, SQL Server, MySQL, Elasticsearch, Neo4j

Frameworks: FastAPI, Django REST, ASP.NET, React, Streamlit

Testing: Playwright, JMeter, Postman, Swagger

PUBLICATION

- **NICA at EXIST CLEF Tasks 2024**

The 15th Proceedings of the Conference and Labs of the Evaluation Forum, France ([doi](#)) - [GitHub](#)
July 2024 - **A. Naebzadeh**, M. Nobakhtian, S. Eetemadi

- **NICA at Quantum Computing CLEF Tasks 2024**

The 15th Proceedings of the Conference and Labs of the Evaluation Forum, France ([doi](#))
July 2024 - **A. Naebzadeh**, S. Eetemadi

- **MultiCGCN: Multi-Label Text Classification using GCNs and Heterogeneous Graphs**

International Journal of Web Research ([doi](#)) - [GitHub](#)
December 2024 - M. Allahgholi, H. Rahmani, P. Soltanzadeh, **A. Naebzadeh**

- **GinGer at SemEval-2025 Task 11: Leveraging Fine-Tuned Transformer Models and LoRA for Sentiment Analysis in Low-Resource Languages**

The 19th International Workshop on Semantic Evaluation ([doi](#)), Vienna, Austria - [GitHub](#)
April 2025 - **A. Naebzadeh**, F. Askari

- **Advances of Informal to Formal Persian Text Conversion: A Survey**

The 7th International Conference on AI in Computational Linguistics ([doi](#)), Dubai, UAE
Nov 2025 - **A. Naebzadeh**, M. Hashemi, S. Eetemadi

- **APARSIN: A Multi-Variety Sentiment and Translation Benchmark for Iranic Languages**

The 19th Conference of the European Chapter of the Association for Computational Linguistics ([doi](#)), Rabat, Morocco - [GitHub](#)
Feb 2026 - A collaboration among 23 authors

VOLUNTEER

Volunteer Research Contributor

May. 2026 – August. 2026

Cohere Labs

Canada

- Contributing to HumanEval and benchmarking team of the "Multilingual Multicultural Riddles" project to assess LLMs responses.