Habib Kazemi

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Summary

Second-year Artificial Intelligence (AI) student at the University of Bologna with a solid foundation in Computer Engineering and a growing specialization in Large Language Models (LLMs) and advanced Natural Language Processing (NLP). Familiar with modern AI frameworks such as LangChain and LlamaIndex, and currently exploring their use in agentic Retrieval-Augmented Generation (RAG). A curious and collaborative learner, motivated to apply AI theory to real-world, cross-disciplinary projects.

Technical Skills

Programming Languages: Python, Java, Kotlin, C, Shell, JavaScript, TypeScript, Prolog

Platforms, APIs, and Libraries: PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn, LangChain, LLamaIndex, LangGraph, SmolAgents, asyncio, Z3, CUDA, OpenMP

Misc. Tools: Git, Docker, Linux, Jupyter, Marimo, uv, SQL, MiniZinc

Projects

Sexism Detection Jan 2025

Natural Language Processing (NLP) *Python, PyTorch, Hugging Face transformers*

- Implemented and evaluated LSTM-based architectures, including Bidirectional LSTM and multi-layer variants, to classify tweets for sexist expressions.
- Applied and assessed zero-shot and few-shot prompting techniques using Mistral-7B-Instruct-v0.3 and Phi-3.5-mini-instruct for sexism detection.

Multiple Couriers Planning problem Dec 2024

Optimization *Python, Z3, Docker, GitHub Actions*

- Implemented a Satisfiability Modulo Theories (SMT) model using Z3 solver to efficiently solve the Vehicle Routing Problem (VRP), optimizing delivery routes and resource allocation.
- Containerized the entire solution environment with Docker, enabling consistent execution across different systems.
- Established automated CI/CD pipelines using GitHub Actions that build the Docker image, execute SMT solvers and preserve results as downloadable artifacts.

Sea Surface Temperature Reconstruction under Cloud Occlusion Sep 2024

Deep Learning *Python, TensorFlow, Keras*

- Developed a deep learning model to reconstruct sea surface temperatures occluded by clouds using data from the MODIS dataset.
- Implemented a U-Net architecture with encoder-decoder structure and skip connections for effective image reconstruction.

Product Recognition of Food Products Jul 2024

Computer Vision-based Object Detection *Python, OpenCV*

- Implemented a computer vision system that detects and recognizes supermarket products from heavily noise-corrupted shelf images.
- Designed an image processing pipeline combining median blur and bilateral filtering for denoising, SIFT feature extraction with homography-based transformations to locate products, and verification through template matching, HSV color analysis, and channel-specific feature matching to distinguish between similar-looking products despite heavy noise.
- Successfully implemented both single and multiple instance detection with precise reporting of product locations, dimensions, and counts.

GPU-Accelerated Genetic N-Queen Solver 2019

GPU-Accelerated Genetic Algorithm for the N-Queen Problem *C, CUDA, Genetic Algorithm, GPU*

- Solved the N-Queen problem using a genetic algorithm implemented in C.
- Analyzed performance metrics and identified that the fitness function was responsible for 99.5% of the execution time.
- Leveraged GPU acceleration with CUDA to optimize the fitness function, achieving a 30X speedup over a baseline CPU implementation.

Experience

Backend Developer (Part-time) Oct 2021 – Mar 2022
Dadeh Afzar Arman *Tehran, Iran*

- Built a backend system for sending bulk SMS using Nest.js and TypeScript
- Integrated third-party SMS providers and developed RESTful APIs for scheduling and tracking message delivery

Android Developer Intern (Remote) Jul 2018 – Dec 2018
VideoLAN *Paris, France*

- Contributed to the VLC for Android open-source project by refactoring code using Kotlin and adopting MVVM architecture
- Implemented coroutine-based concurrency and replaced legacy Java components with modern Kotlin equivalents
- Designed and introduced the project's first unit and instrumentation tests, improving code quality and maintainability
- Integrated Room for database management and migrated old database logic to support reactive data flows
- Resolved long-standing user-reported bugs and implemented highly requested features

Education

University of Bologna Bologna, Italy
M.S. in Artificial Intelligence *Sep 2023 – (Expected) Mar 2026*

Shiraz University Shiraz, Iran
B.S. in Computer Engineering - Hardware *Sep 2014 – Jul 2019*

Languages

Languages: English (Fluent), Persian (Native), Turkmen (Native), Italian (Beginner)