

Habib Kazemi

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Phone number available upon request

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 PydanticAI, LangGraph and LlamaIndex, with hands-on experience building a full-stack multi-agent AI application from concept to deployment. Curious and collaborative learner with a keen interest in applying 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, PydanticAI, LangChain, LlamaIndex, LangGraph, SmolAgents, asyncio, Z3, CUDA, OpenMP

Misc. Tools: Git, Docker, Linux, Jupyter, Marimo, uv (Python package manager), SQL, MiniZinc

PROJECTS

Adaptive Language Acquisition System

Ongoing

Full-Stack multi-agent AI Application

Python, LLM, PydanticAI, Py-FSRS, FastAPI, PostgreSQL, Redis, arq, Docker

- Architected a cognitively-informed multi-agent language learning system that dynamically extracts linguistic features from arbitrary user content and generates contextually-aware practice scenarios using principles from second language acquisition theory and memory consolidation research.
- Live Demo: lingua.habibkazemi.dev — Proof of Concept

Mitigating Reasoning-LLM Social Bias

Jul 2025

NLP

Python, LLM, LangChain

- Developed a novel multi-judge pipeline to address how reasoning steps in LLMs can introduce or amplify stereotypes by identifying and filtering biased reasoning steps before they influence final answers.
- Conducted extensive experiments on BBQ (English) and MBBQ (multilingual: English, Spanish, Dutch, Turkish) datasets to evaluate bias reduction effectiveness.
- GitHub Repository: github.com/kazemihabib/Mitigating-Reasoning-LLM-Social-Bias

Sexism Detection

Jan 2025

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.
- GitHub Repository: github.com/kazemihabib/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.
- GitHub Repository: <https://github.com/kazemihabib/Multiple-Couriers-Planning-Problem>

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.

Supermarket Product Recognition

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 similar-looking products despite significant noise.
- Successfully implemented both single and multiple instance detection with precise reporting of product locations, dimensions, and counts.
- GitHub Repository: <https://github.com/kazemihabib/Supermarket-Product-Recognition>

GPU-Accelerated Genetic N-Queen Solver

Feb 2019

Genetic Algorithms, CUDA Acceleration

C, CUDA, 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.
- GitHub Repository: <https://github.com/kazemihabib/GPU-Accelerated-Genetic-Algorithm-N-Queen>

EXPERIENCE

Backend Developer (Part-time)

Oct 2021 – Mar 2022

Dadeh Afzar Arman

Tehran, Iran

- Built a backend system for sending bulk SMS using NestJS 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

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