Mohammadamin Kafi

◇ **Website** ◇ **Email** ◇ **Teams** ◇ **GitHub** ◇ **LinkedIn** ◇ **+98-939-1607851**

EDUCATION

Bachelor of Science in Computer Engineering **Sep 2021 – Present**
Department of Electrical and Computer Engineering, Isfahan University of Technology, Iran
Minor: Intelligent Systems
GPA: 18.06/20 (3.6/4)

High School Diploma **Sep 2018 – Sep 2021**
Ezhei 2 High School (NODET)

WORK EXPERIENCE

Artificial Intelligence Engineer **Jul 2025 – Present**
Artificial Intelligence Center, Isfahan University of Technology (IUT)
Developing AI agents and multi-agent workflows for task automation and decision-making. Built a Django backend for a chatbot, containerized the system with Docker, and supported CI/CD pipelines. Worked on prompt engineering, knowledge integration, and domain-specific LLM optimization.

Artificial Intelligence Engineer **Jan 2025 – Jun 2025**
Pishro Hooshmand Sepahan
Part-time member of the AI R&D team at an industrial automation firm. Developed machine learning models for predictive maintenance and fault diagnosis to enhance system reliability.

Embedded Systems Engineer **May 2023 – Sep 2024**
Kian Pardaz ICT
Designed and optimized embedded hardware/software for industrial automation, including R&D on metal 3D printing systems.

Image Processing in Robotics **Jan 2022 – Aug 2022**
Advanced Robotics and Mechatronics Laboratory, IUT
Applied image processing techniques for robotic automation, focusing on real-time object detection and feature extraction.

TEACHING EXPERIENCE

Undergraduate Teaching Assistant
- Algorithm Design under the supervision of Dr. Maleki, Spring 2024
- Computer networks laboratory under the supervision of Dr. Fanian, Spring 2024 and Spring 2025
- Artificial Intelligence under the supervision of Dr. Falsafain, Fall 2024
- Computational intelligence under the supervision of Dr. Hosseini, Spring 2025
- Game Theory under the supervision of Dr. Narimani, Spring 2025

Volunteer & Workshop Instruction
- Instructor of Computer Vision during IUT's CESSA TechStack Event, 2025
- Instructor of Deep Learning during IUT's CESSA TechStack Event, 2024
- Instructor at Rasta's Summer School, 2024
- Instructor at Rasta's Summer School, 2022

NOTABLE PROJECTS

- **IP102 Pest Classification with CLIP and Qwen** **GitHub**
  Implemented zero-shot and fine-tuned pest classification using CLIP and Qwen-2.5-VL on the IP102 dataset. Developed modular training and evaluation pipelines with custom loss functions and automated reporting of classification metrics and confusion matrices.

- **Text-to-SQL Agent with Multi-Agent Planning** **GitHub**
  Built a high-performance Text2SQL agent combining RAG, ReAct-style planning, and multi-agent coordination to convert natural language into executable SQL.

- **LLM Fine-Tuning for Domain Adaptation** **GitHub**
  Implemented multiple LLM fine-tuning strategies including full fine-tuning, soft prompting, adapters, and LoRA. Evaluated each method's effectiveness on custom NLP tasks for domain-specific applications.

- **RAG Pipeline for Domain-Specific QA** **GitHub**
  Designed and deployed end-to-end RAG pipelines incorporating Named Entity Recognition (NER) and semantic search to enhance information retrieval for question-answering systems in specialized domains.

- **Web-Based Storehouse Management System for I4 Lab** **GitHub**
  Developed a full-stack web application using Django (backend) and React (frontend), with Docker-based deployment, to manage inventory and logistics for I4 Lab.

- **Real-Time Colonoscopy Image Segmentation for Edge Devices**
  Designed deep CNN models for real-time segmentation of colonoscopic images optimized to run on hardware-constrained platforms. Focused on accuracy and efficiency.

- **A New Method for Content-Aware Image Retargeting** **GitHub**
  Developed a content-aware image retargeting algorithm combining seam carving and scaling to resize images while preserving key content using an energy map.

- **Image Processing on Drones to Detect Plant Pests**
  Utilizing Python's OpenCV library, I developed a project to maneuver drones over plants in a house garden to detect pests.

- **AI Bot for Ultimate Tic-Tac-Toe game** **GitHub**
  I developed an AI bot employing the Minimax algorithm with Alpha-Beta pruning for Ultimate Tic-Tac-Toe as the final project for my Game Theory course.

TECHNICAL SKILLS

- **Programming Languages:** C, C++, C#, Rust, Python, MATLAB, Verilog
- **Frameworks and Tools:** OpenCV, NumPy, Pandas, TensorFlow, PyTorch, Django, Docker, Nginx, LangChain, transformers

LANGUAGES

- **Farsi:** Mother tongue
- **English:** Full Proficiency. Achieved a TOEFL score of 103 in 2020 (obselete).