Arian **Firoozi**

B.E. IN COMPUTER ENGINEERING, SCHOOL OF ECE, UNIVERSITY OF TEHRAN, IRAN

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Education

University of Tehran   *Iran*

B.E. IN COMPUTER ENGINEERING   *Sep. 2021 - Present*

- Specialization: Software Engineering
- Current GPA (converted): 3.56/4.0

Research Experience

Industrial Automation and Intelligent Information Processing Lab.   *University of Tehran, Iran*

RESEARCH ASSISTANT (REMOTE)   *Oct. 2024 - Present*

- Systematic literature review of deep learning application in medical brain image registration
- In depth review of 100+ papers
- Results are not submitted yet
- Under supervision of Professor Behzad Moshiri, Assistant Professor Mohammadreza Abolghasemi Dehaqani and Dr. Hamid Azadegan

High Performance Computing Lab.   *University of Tehran, Iran*

RESEARCH ASSISTANT (REMOTE)   *Jul. 2025 - Sep. 2025*

- Designed and implemented SNN networks, GUI and Python-Verilog integration of an end-to-end GUI-driven, hardware-aware ANN to SNN framework with Brian2 simulation and SystemVerilog export
- The framework supports LIF, Izhikevich and Hodgkin-Huxley neurons
- Results are ready but not submitted yet
- Under supervision of Associate Professor Saeed Safari

UTCar Project (Autonomous Driving Platform)   *University of Tehran, Iran*

RESEARCH ASSISTANT (ON-SITE)   *Oct. 2024 - Jul. 2025*

- Implemented deep reinforcement learning networks (e.g. DQN) for autonomous driving on HighwayEnv and Carla
- Deployed and integrated HighwayEnv and Carla simulators with laboratory environment
- Designed maps in SUMO simulator and converted results for Carla simulator
- Gathered dataset and trained CNN networks for distance and trajectory estimation of a physical toy car
- Under supervision of Associated Professor Mehdi Modarressi

Embedded Systems Lab.   *University of Tehran, Iran*

RESEARCH INTERN (ON-SITE)   *Jul. 2024 - Sep. 2024*

- Developed an application to convert PyTorch models to hardware compatible graphs with visual outputs
- Designed a new GUI for existing project
- Under supervision of Associated Professor Mostafa Ersali

Teaching Experience

Deep Learning (Graduate Course)   *University of Tehran, Iran*

TEACHING ASSISTANT   *Jan. 2025 - Present*

- Designed and graded computer assignments
- Under supervision of Associate Professor Ahmad Kalhor

Operating Systems (Undergraduate Course)   *University of Tehran, Iran*

TEACHING ASSISTANT   *Sep. 2024 - Present*

- Designed and graded course computer assignments
- Designed and graded laboratory assignments
- Designed sample questions
- Conducted TA sessions to explain sample questions and answer students' queries
- Graded quizzes
- Under supervision of Professor Mehdi Kargahi

Deep Learning (Graduate Course)   *International Compus, Sharif University, Iran*

TEACHING ASSISTANT   *Jan. 2025 - Jul. 2025*

- Designed one computer assignment
- Course remains unfinished due to complications
- Under supervision of Assistant Professor S. AmirAli G. Ghahramani

Computer Networks (Undergraduate Course)   *University of Tehran, Iran*

Teaching Assistant   *Sep. 2024 - Jul. 2025*

- Designed and graded computer assignments
- Designed and graded homework
- Under supervision of Professor Naser Yazdani

Computer Architecture (Undergraduate Course)   *University of Tehran, Iran*

Teaching Assistant   *Sep. 2023 - Jul. 2024*

- Designed and graded computer assignments
- Graded quizzes
- Under supervision of Associate Professor Saeed Safari

Projects

SmolDriver   *University of Tehran, Iran*

HTTPS://GITHUB.COM/ARIANFIROOZI/SMOLDRIVER   *2025*

- Small vision language model (2.5B) for preception and prediction tasks in autonomous driving
- Replaced SmolVLM's vision tower with a custom qformer-based transformer
- Tested on DriveLM dataset and outperformed baselines (SmolVLM-finetuned)
- Inspired by DiMA framework

UTFusion   *University of Tehran, Iran*

HTTPS://GITHUB.COM/ARIANFIROOZI/UTFUSION   *2025*

- A fast and predictable real-time module for fusing camera and laser data
- Part of UTCar project but implemented independent from the laboratory
- Co-designed and implemented overall structure
- Conducted comprehensive tests for memory and time requirement estimation
- Extracted formal accuracy proofs and time constraints

MioBook   *University of Tehran, Iran*

HTTPS://GITHUB.COM/ARIANFIROOZI/INTERNET-ENGINEERING-COURSE-PROJECTS   *2025*

- Single-page web application for a hypothetical online bookstore
- Used Java, JS, Maven, Spring, SQL, Vue, Redis and Docker
- Internet engineering course project

UTNetSim   *University of Tehran, Iran*

HTTPS://GITHUB.COM/ARIANFIROOZI/UTNETSIM   *2024*

- A simple computer network simulator
- Simulates simplified UDP, TCP, DHCP and BGP protocols
- Supports Mesh, RingStar and Torus topologies
- Designed as a computer networks course project and later used as a base for new computer assignments

Technical Skills

AI & ML	LLMs, VLMs, Computer Vision, Transformers, SNNs, Kolmogorov-Arnold Networks, Knowledge Distillation
Programming	Python, C/C++, Java, Verilog
Frameworks	PyTorch, TensorFlow, LangGraph, QT, PySide, Spring
Tools	Git, Docker, Linux, LATEX, Maven
Specialized Areas	Deep Learning, Medical Image Registration, Computer Vision, Autonomous Driving

Languages

English	Fluent (IELTS Overall Band 8.0, 2025)
Persian	Native
Azerbaijani	Native
Turkish	Advanced