Nazanin Amini

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Education

University of Texas at San Antonio San Antonio, USA
PH.D. in Computer Science, 2025–Present
GPA: N/A
- Research Area: "*Conditioned Human Motion Generation*"
- Supervisor: Dr. Kevin Desai

Shiraz University Shiraz, Iran
M.S. in Electrical Engineering, 2019–2022
GPA: 18.10/20 (3rd Rank)
- Thesis: "*Background Subtraction Based On Deep Neural Network*"
- Supervisor: Dr. Mehran Yazdi

Shiraz University Shiraz, Iran
B.S. in Electrical Engineering, 2014–2019
GPA: 15.24/20
- Thesis: "*Visual Finger Recognition platform for processing number sign language*"
- Supervisor: Dr. Peyman Setoodeh

Research Interests

- Human Motion Generation, 3D Human Pose Estimation, Multimodal LLM
- Human Action Recognition, Motion Capture and Retargeting, Temporal Sequence Modeling
- Pose-conditioned Image/Video Generation, Vision-Language Modeling

Skills

- **Technical Skills:** Python, Matlab, C/C++, OpenCV, PyTorch, Keras, TensorFlow
- **Softwares:** LateX, OrCAD Capture, Proteus, CodeVisionAVR, Arduino, Altium Designer
- **Soft Skills:** Problem Solving, Teamwork, Communication, Leadership

Research Experiences

- **Research Assistant – Signal and Image Processing Research Laboratory(SIPL), Shiraz University, Shiraz, Iran, Sep 2019-Sep 2022**
  - Developing background subtraction models based on EfficientNet and ResNet that includes attention blocks and ASPP module for more reliable, computationally efficient, and high-speed detection and segmentation of moving objects in videos.

  - Learning multi-domain convolutional neural networks for visual tracking with Extreme Learning Machine (ELM) layer. Inspired by the ELM's low computational complexity and high speed, we proposed a classification layer (output layer) that applies ELM to enhance accuracy and to be more computationally efficient and high speed in the online learning process.

- **Research Assistant – Cognitive System Research Laboratory, Shiraz University, Shiraz, Iran, Apr 2018-Sep 2018**
  - Visual Fingers Recognition platform for processing number sign language. I aimed to utilize CNN for processing video frames to detect the hand's postures and fingers. Afterward, Captioning the frames by translating the prediction to text and utilizing the text-to-voice function.

- **Research Assistant – Bamdad Project Laboratory (BPL), Shiraz University, Shiraz, Iran, Feb 2016-Sep 2018**
  - Designing face recognition security system utilizing PCA algorithm and Arduino microcontroller
  - Designing a smart lighting unit using a Wi-Fi module and telegram robot

- **Course Projects**
  - Implement and training of Knowledge Distillation and Self-Distillation network on the Cifar-100 dataset
  - Training DeepLabV3+ model (segmentation) on Pascal VOC2012 dataset
  - Implement DDQN algorithm for an OpenAI gym environment
  - Training YOLOv3 network on raccoon dataset

Work Experiences

Bamdad Project Laboratory (BPL), Shiraz University Shiraz, Iran
Instructor Mar2024-Jun2024

- Instructing Deep Learning with PyTorch

Shiraz University Shiraz, Iran
Workshop Instructor Mar2024-Apr2024

- Instructing Python programming language from scratch

Transportation and Traffic Research Center Shiraz, Iran
Python Programmer Aug2018-Jul2019

- Optimal location of median U-turn intersection based on GIS data using GENETIC algorithm to provide light traffic congestion**
- Optimizing the configuration of urban streets in order to define traffic regulation with genetic algorithm and simulated annealing algorithm**
- Evaluating public bus congestion and their availability in each urban zone using data analysis with Python**

** The precision and reliability of the results were assessed by EMME software and used for future Shiraz municipality street configuration planning.

Teaching Experiences

- **Linear Algebra** (Spring 2022, Shiraz University)
  Instructor, Designer, and Grader of Homework/MATLAB Assignments
- **Signal & Systems** (Spring 2018 & 2021, Shiraz University)
  Instructor, Designer, and Grader of Homework/MATLAB Assignments
- **Circuit Theory 1 & 2** (Spring 2020 & 2021, Shiraz University)
  Instructor, Designer, and Grader of Homework Assignments
- **Engineering Math** (Fall 2020 & 2021, Shiraz University)
  Designer and Grader of Homework Assignments
- **Electronic 1 & 2 Lab** (Fall 2019 & 2020, Shiraz University)
  Laboratory Teaching Assistant

Selected Courses

Deep Learning (Graduate) (**19.30/20**)
Machine Vision (Graduate) (**18.00/20**)
Image Processing (Graduate) (**19.03/20**)
Pattern Recognition (Graduate) (**19.00/20**)
Advanced Communication Theory (**17.00/20**)
Linear Algebra (Undergraduate) (**19.30/20**)

Awards & Honors

- Ranked 3rd GPA among the graduating class, Shiraz University, (2022)
- Achieved First place in competition between all University councils, "Motion Festival," As a secretary of IEEE Shiraz University Branch. (2018)
- Achieved Outstanding Student branch award between 55 IEEE Iran section Universities' branches, As a secretary of IEEE Shiraz University Branch. (2017)
- Conquering Mount DAMAVAND Peak accompany by university mounting climbing team (the highest peak in Iran and Western Asia and the highest volcano in Asia), Height 5610 m, (2018)

Languages

- **Persian:** Native
- **English:** Professional
- **French:** Basic Knowledge

References

- **Dr. Kevin Desai**
  Assistant Professor, Computer Science, University of Texas at San Antonio
  Email: Kevin.Desai@utsa.edu
- **Dr. Mehran Yazdi**
  Full Professor, Department of Communications and Electronics, School of Electrical and Computer Engineering, Shiraz University
  Email: yazdi@shirazu.ac.ir