Amirhossein Dadashzadeh Taromi

Seeking Ph.D. Position In Computer Science

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RESEARCH INTERESTS

- Machine Learning Mathematics
- Deep Learning
- Computer Vision
- Bioinformatics
- Quantum Computing (new to the field)

EDUCATION

Institute for Advanced Studies in Basic Sciences — **Zanjan, Iran**
M.Sc. in Artificial Intelligence — *Sep 2023 – Now*

- GPA – **19.82/20 (First Rank)**

Zanjan University — **Zanjan, Iran**
B.Sc. in Computer Engineering — *Sep 2018 – Sep 2023*

- GPA – **15.97/20 (Top 10%)** Transcription

PUBLICATIONS

A Data-Driven Algorithm Based on YOLOv8 for Object Detection, Tracking, Distance Estimation, and Size Measurement in Stereo Vision Systems — *2023*

CAAI Transactions on Intelligence Technology | under review

- Proposing a new method for distance and size measurement based on deep learning.
- Eliminating the explicit need for cameras calibration in stereo vision systems.
- Improving the accuracy in most cases in both distance and size measurement compared to counterpart methods.

TECHNICAL SKILLS

- Programming Language – **Python, C/C++, Java, Dart, Assembly, JavaScript, PHP, HTML/CSS, SQL, Visual Basic 6.0, Bash**
- Web Development – **Vue.js, Laravel, Express.js, jQuery, Bootstrap, WordPress,JavaScript ES6, Django, Flask**
- Machine Learning – **Sklearn, TensorFlow, OpenCV, Numpy, Pandas, PyTorch, Detectron2, MediaPipe, Gym**
- DevOps – **Linux System Administrator**
- Hardware - **AVR Microprocessor Programming, Verilog**
- Version Control – **Git**
- Graphic Design – **Photoshop, Gimp, Figma, Blender, Zbursh**
- Game Engine – **Unity**

- General – **LaTex**, **Microsoft Office**, **LibreOffice**, **Google Drive**

PROJECTS

Undergraduate Projects

Traffic Sign Detection | *2021*
- Implemented using YOLOv5 in Google Colab platform.
- Collected data set and used labelImg to annotate images into 10 various classes.

Rule Based Classifier | *2020*
- Sentimental Classifying Tweets using a Rule Based Classifier.
- Used Spark and PySpark to implement MapReduce programming model to increase computational speed.

Natural Language Processing University Course | *2020*
- Implementation of Analytical Dictionary using pairs of English and Farsi subtitles.
- Max Length Tokenizer algorithm implementation.
- Information Retrieval on Hamshari corpus to search and show related queries.
- Naive Bayes Classifier implementation in python for classifying Farsi news in 23 categories, able to obtain 75% accuracy.

Mini C Compiler | *2021*
- Mini C compiler implemented using PLY Python library.
- Included Lexer, Parser, and Semantic Analyzer.

Comparison of Different Local Search Algorithms | *2021*
- Implemented and compared different local search algorithms such as Hill Climbing, Simulated Annealing, and Genetic Algorithm using Python.
- Used Matplotlib to illustrate evaluation of their performance.

MIPS Cache-Simulator | *2020*
- MIPS cache simulator which supports different memory structures such as Direct Map, Fully Associative, N-way Associative and replacement policies involving Random, FIFO (First In First Out), LRU (Least Recently Used), LFU (Least Frequently Used)
- Used Python to implement MIPS cache simulator.

Maze Solver | *2019*
- The User Interface designed using JavaFX to create a maze and illustrate the shortest path.

Downloader Project | *2019*
- Explored web pages in any desire depth and find the link of files in order to download them.
- Implemented using Java and beautifulsoup library.

Tic-Tac-Toe Artificial Intelligence | *2018*
- Used python to implement Decision tree algorithm.
- Command Line Interface is available to play with AI.

Other Projects

Reinforcement Learning using PyTorch | *2023*
- Implemented the Experience Replay, Double Deep Q learning, and Dueling Double Deep Q learning mechanism using PyTorch.
- Used CNNs network to extract environment features from a Grayscale image of the Pong Game environment alongside Deep Q learning for our agent to learn to play Pong Game and dominate the opponent.

Trader bot | *2022*
- An overview and implementation of a predicting and observing system for the cryptocurrency market using LSTM Neural Networks using TensorFlow.
- Connected to the telegram channel to report new signals.

A Comparison of Different Object Detection Networks on Coral Refs Dataset | *2022*
- Comparison of RetinaNet, ResNet, YOLOv4, and YOLOv5 performance for object detection task on coral refs dataset.
- Reviewing the effect of Data Augmentation and Image Enhancement on the performance of the models.

PyImageSearch Deep Learning for Computer Vision | *2022*
- Implementation of PyImageSearch Deep Learning for Computer Vision book instructed by Prof. Adrian Rosebrock.
- Gaining ground understanding of Neural Networks and Convolutional NNs by implementing them using pure python.

Karam | *2020*
- A todo list application to practice JavaScript/ES6 best practices.
- Designed in Figma and Implemented using HTML/CSS and JavaScript/ES6.

ES6 Learning Path | *2020*
- Provided ES6 course and it's solved exercises to help students who are interested to learn it.

Moshaveran Web Application | *2020*
- Online consulting and reserving appointment application.
- Front-end implemented using Vue.js.
- Back-end developed by Laravel framework and MySQL as Database.

Simple WebRTC Chat Application | *2020*
- Implemented WebRTC using HTML/CSS and JavaScript.
- Configured and run TURN server on my personal system in order to test the functionality of application.

Kalantar Bashi Android App | *2019*
- Local network duel game in which one player connects to the other one's hotspot, they will stand face to face, and get ready to shoot after the command voice. The player who shoot first to the other player is the winner.
- Implemented using Android Studio/Java.

WORK EXPERIENCES

Freelance **Qazvin, Iran**
Web Developer and Software Engineer *July 2020 – Present*
- Designed and Developed WordPress templates and plugins using HTML, CSS, JavaScript, and PHP.
- Setup and deployed WordPress on cPanel hosts and config DNS in order to connect domains to server.
- Experienced in building Node.js RESTful APIs.
- Developed Web Apps using Vue.js framework.
- Designed websites' User Interface and logo using Figma and Gimp.

Saiepardaz Co. **Qazvin, Iran**
Web Developer and Linux System Admin *Jan 2020 – July 2020*
- Setup and maintained Linux Servers, configured and ran services such as SFTP, Apache Web Server, OpenVPN, and other services.
- Deployed several WordPress Web Sites on Linux Virtual Private Servers.

Certifications

Coursera Machine Learning Specialization |
Instructed by Prof.Andrew Ng. *October 28, 2022*

- Supervised Machine Learning: Regression and Classification
- Advanced Learning Algorithms
- Unsupervised Learning, Recommenders, Reinforcement Learning

HONORS AND AWARDS

Accepted in Computer and Physics Olympiads second round *2017,2018*

Best undergraduate student project for Stereo Center *2022,2023*

Languages

Persian: Native
English: Fluent
Test of English as a Foreign Language (TOEFL) *Dec, 2021*

- Reading – **25** Listening – **23** Speaking – **23** Writing – **24**
- **Overall – 95**

REFERENCES

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