ROHAM ZENDEHDEL NOBARI

Roham Zendehdel Nobari | Roham Zendehdel Nobari | rzninvo@gmail.com

Research Interests

Digital Twins, Computer Vision, Deep Learning, Generative Adversarial Networks, Intelligent Transport Systems, Natural Language Processing

Education

Amirkabir University of Technology September 2018 - Present

- Bachelor of Science in Computer Engineering
- Overall cGPA[1]: 3.20/4.0
- Major cGPA: 3.31/4.0

Allameh Helli 3 Highschool (NODET) 2014 - 2018

- Diploma of Education in Mathematics and Physics
- cGPA: 3.91/4

Work and Research Experience

Thesis: Digital Twin of a Traffic Scene Using RSU and AWSIM March 2023 - Present

- Under the supervision of Prof. Mahdi Javanmardi
- I am currently working on my thesis in the field of Intelligent Transport Systems and Digital Twins. This research focuses on creating a semi-automatic digital twin of a traffic scene near the Amirkabir University Campus.
- The project involves 3D modeling, object detection such as detecting pedestrians and moving vehicles using camera data, object movement path extraction using Lidar sensors, and finally feeding all the processed data to the AWSIM simulator so we can have a real-time simulation.
- Libraries: ROS, AWSIM, Keras, Tensorflow, OpenCV
- Software: AutoCAD, Sketchup, Cloudcompare, Veloview

Researching Assistant, Microprocessors and Assembly Language Spring 2023

- Under the supervision of Prof. Hamed Farbeh and Prof. Babak Sadeghiyan
- I am currently the head of a research team under the guidance of Professor Farbeh, and we are currently researching on Software Disassembling Techniques with Assembly.
- Our findings will be presented as multiple hands-on video lectures in the upcoming Fall 2023 semester for the Microprocessor and Assembly Language course.

ParticleB June 2022 - November 2022

- As an intern for a period of six months, my duties primarily involved gaining knowledge about Natural Language Processing (NLP) and developing a model capable of analyzing sentiment polarity in reviews of cryptocurrency trends.Subsequently, I was tasked with implementing a Google Chrome extension designed to predict current trends in cryptocurrency using the acquired reviews from tradingview.com. particleb.ai

[1]My Iran GPA was converted to Standard US GPA with this calculator.

Selected Course Projects

Multi-Labeled Text Classification February 2023 - March 2023

- This project aims to classify input samples from Ronash dataset into 20 categories using text processing techniques, hyperparameter tuning, and XGBoost decision tree tuning. Various LSTM and Conv1D layer combinations were also tested in a hand-made model. Project Link

Snail Jumper - Neuro Evolution May 2022 - June 2022

- A neural network with a genetic algorithm playing the Snail Jumper game with K fittest, Roulette Wheel, SuS, and Q- Tournament selection algorithms. Project Link

Health Evaluation Using Fuzzification Algorithms May 2022 - June 2022

- A three-phase system was developed to evaluate patients' health, which involves fuzzification, rule inference, and defuzzification using the centroid integral algorithm to convert fuzzy sets back to real values. Project Link

Data Mining Projects September 2022 - December 2022

- Implemented various stuff including Data Preprocessing, Linear Regression, Polynomial Regression, Keras NN Models, K-Means and DBScan Clustering, Apriori Decision Trees, XGBoost and GridSearchCV Project Link

Search Engine January 2022 - February 2022

- Implemented a search engine using different models and algorithms, including binary search, tf-idf, and word embedding. Also, K-means clustering and KNN algorithms are used to improve search accuracy and speed. Project Link

Teaching Experience

Teaching Assistant, Principals of Artificial Intelligence Summer 2022 - Spring 2023

- Under the supervision of Prof. Mahdi Javanmardi
- As part of a team effort, I contributed to the complete design and translation of the Artificial Intelligence course lectures based on UC Berkley CS188 AI Course Materials, serving as the lead for both the slide creation and translation review teams, ensuring the integrity and fidelity of the content.

Head Teaching Assistant, Software Engineering II Spring 2023

- Under the supervision of Dr. Faezeh Gohari
- Assigned as the Head Teaching Assistant of Software Engineering II along with Pouyan Hesabi, to manage the other teaching assistants.
- Designing (and grading) assignments and projects related to Software Testing and the implementation of Unit Tests. Also recording lecture videos for the students.

Teaching Assistant, Advanced Programming Spring 2023

- Under the supervision of Prof. Amir Kalbasi and Prof. Hossein Zeinali
- Designing (and grading) assignments and projects related to the Java programming language and Object Oriented Programming.

Technical Skills

Programming Languages: Python, Java, Kotlin, C, C++, Javascript, HML, CSS
Artificial Intelligence: Keras, Tensorflow, Pytorch, Scikit Learn, OpenCV
Web Development: NodeJS, React, Golang, Flask
Database Systems: MySQL, SQL Server, MongoDB
Operating Systems: Windows, Linux(Ubuntu)
DevOps: Docker, Kubernetes
Miscellaneous: Pandas, Jira, Git, Latex, Matplotlib, NumPy, VHDL, Arduino, GNS3, Verilog, Pascal, Delphi, Sketchup, ROS, AWSim, Bash

Selected Courses

- Data Mining: 3/4
- Principals of Computational Intelligence: 4/4
- Algorithm Design: 4/4
- Operating Systems: 4/4
- Theory of Machines and Languages: 4/4
- Principals of Artificial Intelligence: 3/4
- Information Security: 4/4
- Software Engineering: 4/4
- Startup Development: 4/4
- Advanced Programming: 4/4
- Computer Architecture: 4/4
- Microprocessor and Assembly Language: 4/4

Awards and Honors

Nationwide University Entrance Exam 2018

- Achieved top 1% among all applicants of the Nationwide University Entrance Exam for B.Sc. in Mathematics and Engineering (Approximately 150000 applicants)

NODET: Entrance Exam Qualification 2011

- Got qualified in the National Organization for Development of Exceptional Talents (NODET) school entrance exam

Languages

Perisan	Native
English	CEFR level: C1
Japanese	JLPT level: N5

References

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