

Curriculum Vitae (CV)

Masoud Rahimi

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INTERESTS

Reinforcement Learning

Cognitive Science

User Personalization

Deep Learning

Data Science

Recommendation Systems

EDUCATION

- University of Tehran** Tehran, Iran
Master of science - Control engineering; GPA: 3.53/4.0 (16.2/20) *Sep. 2019 - Present*
*Thesis title: “**Dynamic Difficulty Adjustment** through Reinforcement Learning”*
Courses: Neural Networks, Pattern Recognition, System Identification, Principles of Cognitive Science, Massive data analysis and systems, Social networks, Nonlinear System Analysis
- Imam Khomeini International University** Qazvin, Iran
Bachelor of science - Electrical Engineering (Telecommunication) *Sep. 2014 - July 2019*

RESEARCH EXPERIENCE

- Research assistant as University of Tehran** Tehran, Iran
Advance Robotics and Intelligence Systems Laboratory *Aug. 2020 - Present*
 - Dynamic Difficulty Adjustment** through Reinforcement Learning in memoeey game: Python is used to implement a visual-spatial-working-memory game that captures gameplay and gaze data with eye tracker device. For the memory game, a measure of perceived difficulty (by human) is defined. In order to solve the dynamic difficulty adjustment problem in the memory game, a reinforcement learning formulization is proposed. In addition, we trained the agent using a simulated reinforcement learning environment, then fine-tuned it in the real world.
 - The Effect of Difficulty on Pupil dilation:** (in progress) An analysis of the relationship between game difficulty and pupil dilation in a visual-spatial-working memory game.
 - ADHD Screening:** Hand-eye coordination game used to distinguish ADHD children from normal children

TEACHING MENTORING EXPERIENCE

- Teacher Assistant of Linear Control Course at University of Tehran** Tehran, Iran
Quiz answers prepared and quiz sheets graded. *Sep. 2021 - Feb. 2021*
- Teacher and Student Advisor at High School (part time)** Tehran, Iran
Taught complementary math and physics classes and held motivational counseling sessions. *Sep. 2014 - May 2015*
- Python programming mentor** Tehran, Iran
Assisted students in solving some exercises and debugging their mistakes. *Sep. 2019 - Des. 2019*
- University National Entrance Exam (Konkour) mentor** Tehran, Iran
Provided scheduling and time management advice to Konkour applicants. *2019*

PROJECTS

- Control of a mountain car using reinforcement learning (Reinforcement Learning):** Implementation of the actor critic algorithm from scratch and comparison with Stable-baselines3 implementation. Tech: Python
- An analysis of the Iran stock market data using MongoDB (Big Data):** A pipeline for downloading and storing data, then preprocessing and analyzing it. Tech: Pymongo, MongoDB
- An analysis of the Iran stock market data using Spark (Big Data):** Data preprocessing and analysis with Pyspark in Google Collaboratory. Tech: Google Collaboratory, Pyspark (Spark Dataframe, Sprak SQL, Spark RDD, Spark GraphX) Inserting and querying
- Introduction to Cassandra (Big Data):** Designing appropriate tables in order to inserte data into tables and querying data using cqsh. Tech: Cassandra, cqsh bash
- Generative Deep Learning (Deep Learning):** Generating similar photos to MNIST dataset using variational auto encoder (VAE). Tech: Tensorflow, Google Collabratory

- **Generative Deep Learning (Deep Learning)**: Generating similar photos to Cifar10 dataset using DCGAN, CGAN, InfoGAN. Tech: Tensorflow, Google Collabratory
- **Honey memory game**: A visual-spatial-working-memory game that stores gaze data as well as game play data. Tech: Pygame, eye tracker
- **Real-Time clock implementation (Embedded systems)**: prototype and analysis of multiple RTC generator circuits.

SKILLS

- **Programming Languages:** Python, SQL, Matlab, HTML, CSS
- **Softwares:** Gym, Stable-baselines3, Sklearn, TensorFlow, GIT, LaTeX, MongoDB, Cassandra, Elasticsearch, Pyspark, kafka, NetworkX
- **Soft Skills:** Problem Solving, Hard Working, Communication, Team Work, Scheduling, Antipathy
- **Language:** English (proficient), Farsi(native)

HONORS AND AWARDS

- Ranked 31th among more than 20000 participants at the University National Entrance Exam (Konkour).
- 3rd rank out of 45 students in high school.

VOLUNTEER EXPERIENCE

- **Summer School of Machine Learning** Tehran, Iran
Over the course of three days, participants learned about Machine Learning and worked on a group project. July 2020

REFERENCES

- **Hadi Moradi, Full Professor at University of Tehran, School of ECE** Tehran, Iran
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- **Hamed Kebriaei, Associate Professor at University of Tehran, School of ECE** Tehran, Iran
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