Amir Hajimohamadi

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EDUCATION

- **University of Tehran** — Tehran, Iran
  B.Sc. in Computer Engineering — *September 2019 - September 2023*

- **Shahid Rajaei High School** — Tehran, Iran
  Diploma in Mathematics and Physics Discipline. — *September 2016 - June 2019*
  Affiliated with the National Organization for the Development of Exceptional Talents (NODET)

TEACHING EXPERIENCE

- **Teaching Assistant**
  University of Tehran
  - **Fundamentals of Programming, Z. Movahedi** — *Fall 2020*
  - **Fundamentals of Programming, R. Ghiasi** — *Fall 2021*

As a teacher assistant at the University of Tehran, I had the opportunity to work closely with Dr. Zahra Movahedi and Razieh Ghiasi in teaching the fundamentals of programming to students. In this role, I supported them in grading assignments, and providing one-on-one assistance to students.

My responsibilities included leading small group discussions, answering student questions, and offering additional support to those who needed it. Additionally, I played an integral role in organizing and facilitating group projects and in-class activities, which helped students to better understand the course material.

Throughout my time as a teacher assistant, I was able to develop strong communication and interpersonal skills, as well as a deep understanding of the principles of programming. I also gained valuable experience in teaching and mentoring, which has helped me to excel in my subsequent academic and professional endeavors.

PROFESSIONAL EXPERIENCE

- **AI Engineer - Asre Danesh Afzar** — Tehran, Iran
  Internship — *Jul 2022 - Sep 2022*

Developing an LSTM model to automatically classify user transaction notes into pre-defined categories, using an imbalanced dataset. Stanza library is used to clean the data. The train model contains:

  - An embedding layer with 200 dimensions (using pre-trained word embeddings trained on Persian Wikipedia)
  - 2 bidirectional LSTM layers with 512 and 256 neurons, respectively.
  - A global max pooling 1D layer
  - And a dense layer of 20 neurons with a softmax activation function
  - 19 million trainable parameters in total.

Several metrics such as cohen kappa score and f1-score are used to evaluate the model. The dataset contained 1.3 million labeled data.

NOTABLE PROJECTS

- **Persian Font Detector (Computer Vision)**: This project trains a deep convolutional neural network to detect 16 famous Persian fonts in images. The model can recognize the font of Persian text in an image with the accuracy of 99.9% on test set. The dataset is made by Python programming language and contains 68856 images of Persian text rendered in 16 different fonts. (August '23)

- **CPU Process Scheduling Simulator (Operating Systems)**: This is a CPU process scheduling simulator built with Unity and C#. It allows simulating and comparing different CPU scheduling algorithms. (August '23) Algorithms Implemented:
  - First Come First Serve (FCFS)
  - Shortest Job First (SJF) - Preemptive and Nonpreemptive
  - Priority Scheduling - Preemptive and Nonpreemptive
  - Round Robin

- **Pneumonia Classification (Computer Vision)**: Training a model to detect Pneumonia using chest x-ray images & ResNet architecture. The dataset is fetched from Kaggle which contains 5,863 X-Ray images (JPEG) and 2 categories (Pneumonia/Normal). The model reached 91.5% test accuracy in 12 epochs. (October '22)

- **Text Classification (Natural Language Processing)**: AI model to classify news from its content based on LSTM. The model reached 79% accuracy after 13 epochs. (July '22)

- **Constraint Graph Maker (Artificial Intelligence)**: Solving a CSP problem in which creating graphs given the constraints on the shape of nodes and their neighbors is needed. (August '22)

- **Persian Word2Vec (NLP, Machine Learning)**: Training word vectors with 100 dimensions using a model consisting of an input layer and 2 sense layers. Its dataset was web scraped from an online Persian poetry library. A word cloud is also provided to see the most frequent words. (August '22)

Skills & Qualities

- **Theoretical Background**: Familiar with Machine Learning and Deep Learning Concepts such as Types of Machine Learning systems, Classification and Regression, SVMs, Decision Trees, Ensemble Learning, Dimensionality Reduction, and Unsupervised Learning techniques.
- **Languages and Tools**: Working knowledge in Python, Java, C++, Javascript, SQL, Bash-Scripting, Git, and LaTeX. Hands-on experience in Machine Learning tools such as scikit-learn, Matplotlib, Numpy, Pandas, and Jupiter notebook.
- **Web Application Development**: Familiar with React, HTML, and CSS.
- **Mobile Application Development**: Familiar with Dart and Flutter.
- **Game Development**: Working knowledge in C# and Unity.
- **Languages**: English (Full professional proficiency- TOEFL: 98/120 (Internet-Based), Persian (Native).
- **Others**: Creative, self-motivated, eager to learn new things. Communicative and collaborative with the ability to work both independently and in a team.

Licensees & Certificates

- **Kaggle**:
  - Computer Vision   *Fall 2022*
  - Intermediate Machine Learning   *Spring 2021*
  - Intro to Machine Learning   *Winter 2020*
  - Pandas   *Winter 2020*
- **Coursera**:
  - What is Data Science?   *Winter 2020*
  - Neural Networks and Deep Learning   *Summer 2022*
  - Improving Deep Neural Networks Hyperparameter tuning, Regularization & Optimization   *Fall 2022*

Volunteer Experience

- **Member of executive Committee at IPRIA 2023**   Qom, Iran
  The 6th International Conference on Pattern Recognition & Image Analysis *Feb 2023*

- **Member of executive Committee at MVIP 2020**   Qom, Iran
  The 11th Iranian and the first International Conference on Machine Vision and Image Processing *Feb 2020*

Hobbies & Interests

- Playing computer games
- Reading books
- Learning new programming languages
- Playing soccer and volleyball
- Listening to music