Parsa Mohammadi | Curriculum Vitae

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| (+98) 9182265891 | <https://parsam.eu.pythonanywhere.com> | | | gmail-logo-png-white-1parsamohammadi@aut.ac.ir |
| [GitHub](https://github.com/PARSA-MHMDI) | | [Linkedin - Free social media iconsLinkedIn](http://www.linkedin.com/in/parsa-mohammadi-0b079620a) | [ResearchGate](https://www.researchgate.net/profile/Parsa-Mohammadi-2) | |

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| EDUCATION |
| * **Amirkabir University of Technology (AUT)**,Tehran, IranSep 2020 – Present * B.S. in Electrical Engineering * **GPA:** **3.56 (17.42 out of 20)**, Last 2 years: **3.88 (18.1 out of 20)** * Ranked within the top 1% of the Iranian University Entrance exam. * **Shahid Beheshti (NODET)**, Kermanshah, IranSep 2016 – Sep 2020 * Mathematics and physics diploma * GPA: 18.87 out of 20.00 * Ranked within the top 2% of the Nationwide NODET Entrance exam.  |  |  | | --- | --- | | RESEARCH INTERESTS | | | * Speech Processing * Large Language Models | * NLP * AI in healthcare | |

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| TEACHING EXPERIENCES |
| Amirkabir University of Technology (AUT), Tehran, Iran Feb 2023 – Jul 2023  Course: “*Linear Control Systems - Electrical Engineering*”   * Assisted students by solving sample questions and guiding them through lessons. * Taught MATLAB and Simulink basics to students. * Provided education material, including projects and weekly homework. * *Supervisor: Dr. Amir A. Suratgar (Amirkabir University of Technology, Tehran, Iran)*   Course: *“Computer Architecture & Microprocessors”* Sep 2023 – Feb 2024   * Created educational materials, including projects and weekly homework. * Facilitated instructional sessions focused on practical problem-solving methodologies. * *Supervisor: Dr. Ahad Shabani (Amirkabir University of Technology, Tehran, Iran)*   Course: *“Logical Circuits”* Sep 2024 – Present   * Taught VHDL programing with Vivado and ISE. * Assisted students by solving sample questions and providing guidance during lessons. * *Supervisor: Dr. Zahra Shariatmadar (Amirkabir University of Technology, Tehran, Iran)*   Sharif University of Technology (SUT), Tehran, Iran Sep 2023 – Present Course: *“Automatic Speech Recognition” – For three semesters*   * Provided education material, including projects and weakly homework. * Conducted weekly quizzes and workshops on using ASR tools like ESPNet. * Managed practical sessions for hands-on experience with ASR technologies. * *Supervisor: Dr. Hossien Sameti (Sharif University of Technology, Tehran, Iran)* |
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| WORK EXPERIENCES |
| **Machine Learning Intern -** [Asr Gooyesh Pardaz](https://asr-gooyesh.com/en/) · Full-time, Tehran, Iran Jul 2023 – Sep 2023   * Trained an end-to-end Automatic Speech Recognition (ASR) model using E-Branchformer architecture on a Persian dataset. * Achieved a 15% improvement in model performance compared to previous models. * Implemented the trained model on Hugging Face Space with Gradio, providing an interactive user interface. Link to [online demo](https://huggingface.co/spaces/parsa-mhmdi/persian-asr).   *- Supervisor: Dr. Hossien Sameti (Sharif University of Technology, Tehran, Iran)* |

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| RESEARCH EXPERIENCES |
| Data-driven Maintenance of Urban Infrastructure in Smart City Dec 2021 – Jul 2022   * Utilized Random Forest, K-means algorithms and MLP to optimize the cost of maintenance and repair of power networks. Achieved 90% accuracy for predicting power network failures. * Developed a Decision Support web application for control centers using Django framework. * Implemented trained Machine Learning models into the web application. * *Supervisor: Dr. Alireza Fereidunian (K. N. Toosi University of Technology, Tehran, Iran)*   **Tondguyan Petrochemical Company Maintenance System** Jul 2023 – Sep 2023 |

* Performed feature reduction on a dataset of mechanical properties of facilities.
* Implemented the K-means algorithm to identify anomalous data clusters.
* *Supervisor: Dr. Somaye Mohammadi (Sharif University of Technology, Tehran, Iran)*

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| PUBLICATIONS |
| * Tamanaeifar, M. H., Nasiri, M. G., Mohammadi, P., Haghshenas, M., Ghadamgahi, M. M., Alimadady, M., Fereidunian, A. (2022, September). *Collaborative Design and Development of Integrated Preventive Maintenance Decision Support Software for Smart City Infrastructure based on Accumulated Data Analytics* [Paper presentation].   8th International Conference on Industrial and Systems Engineering, Mashhad, Iran.  )[*https://civilica.com/doc/1537570*](https://civilica.com/doc/1537570)(   * Mohammadi, P., Suratgar, A., Menhaj, M. Eye Pupil Control Analysis. Vision Research Journal (Under Review) |

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| SKILLS |
| |  |  |  | | --- | --- | --- | | * Programming Skills   Python   * TensorFlow * PyTorch * NumPy * Pandas * Sklearn * Gradio * OpenCV * Matplotlib * Django * PyQt * Threading * Async IO   C/C++  HTML/CSS  JavaScript  Matlab   * Electrical Libraries * Simulink   VHDL  Verilog  HSPICE | * Machine Learning Skills   NLP   * NER * Sentiment analysis * Large Language models * Multi-modal models   Signal/Speech processing   * RNN * LSTM * Transformer * Conformer * E-Branchformer * ESPnet toolkit   Image processing   * CNN * Transfer Learning * Object Detection * U-Net * Style Transfer * Siamese Network   Prompt engineering  AI Classic algorithms  Hugging Face🤗 | * Others   Linux  Git  Docker  Jupyter Notebook PythonAnywhere  ISE Design Suite  Vivado Design Suite   * IP Core * HLS * Vitis * Micro Blaze   Proteus 8  PCB Design (Altium Designer)  STM32 Microcontroller  Cadence (VLSI Designer)  Microwind | |

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| SELECTED PROJECTS |
| * Bachelor thesis: Chest X-ray Images Diagnosis and Report Generation Feb 2024 – Present * Tuned Mini-Gemini (Pre-trained VLLM) on a large dataset of radiology images. * Created a new dataset of paired images and reports for training. * Achieved significant performance improvements on the test set. * *Supervisor: Dr. Saeed Sharifian (Amirkabir University of Technology, Tehran, Iran)* * Sentiment Analysis of Twitter Posts – Machine Learning Course Sep 2023 – Feb 2024 * Conducted preprocessing steps on a dataset of Twitter posts (tokenization, stemming, normalization, etc.). Performed feature extraction using TF-IDF. * Tuned a BERT-based uncased model on the data. * Achieved 95% accuracy on the test set. |

* Trained A Gender Classifier from Scratch Jul 2023 – Sep 2023
  + Trained a MobileNet architecture model using Keras and TensorFlow.
  + Created a new dataset by merging five large image datasets with gender labels.
  + Achieved 92.7% accuracy on the test set.
  + Integrated the model with Django and deployed it on a personal website. Link to [project](https://parsam.eu.pythonanywhere.com/image_classifier/).
* Personal Website Jul 2023 – Sep 2023
* Developed a personal website using the Django framework.
* Included sections for biography, contact information, and online projects. Link to [website](https://parsam.eu.pythonanywhere.com).

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| COURSES | |
| * Artificial Intelligence [Fall 2021] * Machine Learning [Fall 2023] | * Advanced Programming [Winter 2023] * Multimedia Systems [Winter 2024] |
| * Online Certificated Courses: | |
| * Machine Learning * *Dr. Andrew Ng* * Django for Everybody * *Dr. Charles Severance* * Analysis of intelligent biomedical images * *Dr. Mohammad H, Rohban* | * Deep Learning Specialization * Structuring Machine Learning Projects * Convolutional Neural Networks * Sequence Models (Transformers) * *Dr. Andrew Ng* * MATLAB for beginners * *MathWorks* |

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| |  | | --- | | VOLUNTEERING EXPERIENCES | | * Member of “Amirkabir 2021 International Summer School,” Executive Team Mar – Sep 2021    + Invited Dr. Larry Cheng from Penn State University to participate in the summer school.   + Assisted Dr. Larry Cheng during the summer school sessions. * Member of Amirkabir Astronomy Club Apr 2023 - Present * Designed and implemented astronomical events, engaging students and the public in astronomy-related activities. * Participated in charity market Feb 2024 * Created and sold handmade goods to raise funds supporting underprivileged students.  |  |  | | --- | --- | | Honors | | | * Won **1st** place price of IEEE Open Data Hackathon Competition. Nov 2022 * Ranked among **top teams** in Irancell Labs AI Hackathon.Aug 2023 | |  |  |  |  | | --- | --- | --- | | **LANGUAGE PROFICIENCY** | | | | * English (IELTS will be taken by end of September) | * Persian (Native) | * Kurdish (Native) | |