

# MILAD SOLEYMANI

Email: miladsolo99@gmail.com

[GitHub](#) - [Linkedin](#) - [Google Scholar](#)

## EDUCATION

---

- **B.Sc. Electrical Engineering** **Sep 2018 - Sep 2023**  
K. N. Toosi University of Technology, Tehran, Iran
  - ◇ **GPA: 3.18/4** (15.82/20)
  - ◇ **Final project:** Developing a Label Tracking Tool for Semantic Segmentation of Medical Videos and Images  
**Advisor:** Dr. Behrooz Nasihatkon [github](#)
  - ◇ **Industrial Training project:** Designing a predictive system using machine learning algorithms and fast signal processing for online detection of correct or incorrect operation of air conditioning compressors using embedded accelerometer sensors  
**Advisor:** Dr. Yousef Darmani [github](#)
- **Highschool Diploma, Physics and Mathematics** **Sep 2015 - Jun 2018**
  - ◇ **GPA: 4/4** (19/20)

## RESEARCH INTEREST

---

- Artificial Intelligence
- Machine Learning
- Statistics

## RESEARCH EXPERIENCE

---

- **Exploring Classification and Feature Extraction Techniques in Electroencephalography (EEG)**  
**Advisor:** Dr. A. Partovi, Dr. F. Goodarzy **Dec 2019 - Apr 2023**
  - ◇ Designing and implementing models for EEG data classification and developed specialized embedding layers to extract relevant features.
  - ◇ Focusing efforts on designing a novel layer for extracting Common Spatial Pattern (CSP) features from EEG signals.
  - ◇ Developing robust and efficient techniques for seizure prediction using EEG data.
- **Working on a groundbreaking research initiative focused on the use of voice recognition for chronic heart failure (CHF) phenotyping.**  
**Advisor:** Dr. A. Partovi **Aug 2021 - May 2022**
  - ◇ Developing novel algorithms and methodologies for the analysis of voice biomarkers, aiming to propel the field of non-invasive diagnostics for chronic heart failure (CHF)
  - ◇ This project contributed to a deeper understanding of CHF conditions and opened new pathways for patient monitoring and care

- **Developing a robust pipeline encompassing training, inference, and integration of generative models (Stabl-Diffusion, Pix2Pix, and ControlNet)**

Advisor: [RUTILEA](#), Japan

**Apr 2023 - Nov 2023**

- ◇ Implementing state-of-the-art techniques to enhance the stability and efficiency of the pipeline across generative models in computer vision, including generating new industrial images and applying simulated cracks on objects within images
- ◇ Conducting rigorous testing and validation to ensure the reliability and scalability of the developed framework.

## PUBLICATIONS

---

- Partovi A, Mohammadi A., Ziaee S, Soleymani M **POC-CSP: A novel Parameterised and Orthogonally-Constrained Neural Network layer for learning Common Spatial Patterns (CSP) in EEG signals** (Prepared Manuscript)

Link: [Manuscript PDF](#)

- Partovi A, Ziaee S, Soleymani M, Mohammadi A. **A Self-supervised Task-agnostic Embedding for EEG Signals** (Prepared Manuscript)

Link: [Manuscript PDF](#)

- **A Deep Learning Algorithm for Classifying Grasp Motions using Multi-session EEG Recordings**

Link: [10.1109/BCI51272.2021.9385295](#)

Advisor: Dr. F. Goodarzy, Dr. A. Partovi

## WORK EXPERIENCE

---

- **AI/ML Specialist - Computer Vision**

[RUTILEA](#), Japan

**Aug 2022 - Nov 2023**

- ◇ Developing a robust pipeline encompassing training, inference, and integration of generative models (Stabl-Diffusion, Pix2Pix, and ControlNet)
- ◇ Implementing a computer vision algorithm for detecting discrepancies between two videos, for detecting damages on car bodies, resulting in improvement in the accuracy of damage assessment processes.
- ◇ Implementing an object detection algorithm capable of distinguishing empty parking lots from full ones, significantly optimizing parking space management, and reducing manual monitoring efforts
- ◇ Engineering a sophisticated system for the real-time detection of car plate edges, facilitating accurate location tracking and problem identification during processes and improving system reliability
- ◇ Designing an innovative solution for detecting the shape, angle, and location of objects on conveyor belts, aiding robotic systems in picking operations with enhanced precision and efficiency
- ◇ Leading a comprehensive project to develop a state-of-the-art chatbot by integrating advanced NLP models GPT-2, focusing on creating seamless, natural language interactions and boosting user engagement

- **AI/ML Specialist**  
KeyLead Health, Australia

Dec 2019 - Jun 2022

- ◇ designing and implementing an advanced ML model for identifying recyclables on conveyor belts using Kubeflow and Google Cloud Platform (GCP), enhancing sorting efficiency and sustainability. Successfully deployed the model for real-time online inferencing, achieving an accurate model for classification material
- ◇ Collaborating on a high-impact project utilizing Google Cloud Platform to analyze and predict medicine shortages across Australia, facilitating proactive measures in supply chain management and reducing the risk of critical shortages
- ◇ Working on a groundbreaking research initiative focused on the use of voice recognition for chronic heart failure (CHF) phenotyping

## SKILLS

---

- **Programming Languages:**
  - ◇ **Fluent: Python** (PyTorch, TensorFlow, Keras, Scikit-learn, Numpy, Pandas, Matplotlib, MNE, Plotly, OpenCV, Librosa, Dask, PySpark, Kubeflow pipeline(kfp), Django)  
**MATLAB (SIMULINK), R, Java, SQL**
  - ◇ **Basic:** C++, Bash
- **Experimental:**
  - ◇ Statistics, Brain signal processing, Medical Image Processing, Agile & DevOps development methodology
- **Cloud Skills:**
  - ◇ Microsoft Azure, Google Cloud Platform (GCP), AWS
- **Software Skill:**
  - ◇ PSpice, Proteus, Xilinx ISE Design Suite
- **Other Skills:**
  - ◇ GitHub, GitLab, Docker

## COURSES AND CERTIFICATES

---

- **Machine Learning** by Stanford University, Coursera **Feb 2020**  
Grade: 94.11    [See credential](#)
- **Deep Learning Specialization** by Deeplearning.ai, Coursera **Jul 2020**  
Grade: 100    [See credential](#)
- **DeepLearning.AI TensorFlow Developer Professional Certificate** by Deeplearning.ai, Coursera **Jul 2020**  
Grade: 98.43    [See credential](#)
- **Advance python programming and object-oriented thinking course** Quera **Feb 2020**  
Grade: 98.43    [See credential](#)
- **Task-Oriented Course In Linux** Quera **Mar 2023**  
Grade: 98.43    [See credential](#)

## LANGUAGES

---

- **English: Full professional proficiency**

◊ **TOEFL (Academic) Dec 16, 2023**

\* Listening: 27

\* Writing: 21

\* Reading: 23

\* Speaking: 22

- **Persian: Native Language**

## HONORS AND AWARDS

---

- **2020 International BCI Competition 6<sup>th</sup> Place**

**Jan 2019**

◊ Classifying hand grasping motion i.e. cylindrical, spherical, lumbrical

◊ The final result on Classifying this dataset is 40.35%

- **Iran national university entrance for B.Sc**

**2018**

◊ Ranked top 0.3% (over 200,000 students)

## REFERENCES

---

- **Dr. Andishe Partovi:** AI/ML specialist at Google Cloud — Co-Founder at Metronome — PhD candidate University of Melbourne Australia  
Email: andipartovi@google.com [linkedin](#)
- **Dr. Farhad Goodarzy:** Senior Researcher at the University of Melbourne Australia — Data Scientist, Senior Position at Fraim  
Email: goodarzy@unimelb.edu.au [linkedin](#)
- **Dr. Behrooz Nasihatkon:** Assistant Professor at K. N. Toosi University of Technology — CEO at Rahbin Sanat Nasir  
Email: nasihatkon@kntu.ac.ir [linkedin](#)