Dr. Amir Dehsarvi

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Machine Learning Engineer & Data Scientist with expertise in AI-driven medical technologies, neuroimaging, and high-performance computing. Extensive experience developing and optimizing ML/DL models for healthcare applications, with a strong background in Python, MATLAB, R, and deep learning frameworks. Proven ability to build scalable data pipelines, automate complex workflows, and integrate AI solutions into real-world applications. Passionate about leveraging data science and ML to drive innovation in health tech and beyond.

Technical Skills

Machine Learning, Deep Learning, Git, Neuroimaging data analysis, High Performance Computing, MATLAB, C, R, Python, Shell, PHP, SQL, Docker, Linux, AI-based medical devices.

Current Positions

- 2022 to date: **Postdoctoral Researcher**, The Institute for Stroke and Dementia Research (ISD), Ludwig-Maximilians-Universität München (LMU), University of Munich (Germany).
  - Developed and integrated an **automated neuroimaging preprocessing pipeline** (using **Python, MATLAB, R, Shell**) for multiple modalities (**MRI, fMRI, PET, DTI**) into the **GRIP platform (Gates Ventures initiative)**, optimizing data quality and analysis.
  - The pipeline has been utilized in **25+ peer-reviewed publications (2023 to date)**, advancing research in neurodegenerative diseases.
  - **Developed**, **validated**, and **deployed** a **deep learning** model to infer full Alzheimer's disease A/T/N classification from single tau-PET scans, achieving high predictive accuracy for amyloid-PET (r=0.8) and MRI grey matter density (r=0.76).
- 2018 to date: **Chief Technology Officer**, ClearSky Medical Diagnostics Ltd., York (UK).
  - Contributed to the development of **machine learning (ML)-based medical devices** for diagnosing and monitoring **neurodegenerative conditions**, including PD-Monitor, LID-Monitor, and MCI-Monitor.
  - **Optimized ML** for movement disorder analysis, enhancing diagnostic precision.
  - Collaborated with **multidisciplinary teams**, including clinicians and engineers, to integrate AI-driven solutions into clinical applications.

Work History

- 2021-2022: **Postdoctoral Research Associate**, University of York (UK):
  - Applied white-box machine learning to resting-state fMRI data to differentiate depression from healthy controls.
- 2020-2021: **Research Fellow**, University of Aberdeen (UK):
  - Used neuroimaging to define a fatigue-related brain network in rheumatoid arthritis, exploring how therapies impact it for potential DBS or similar targeting.
- 2021: **Machine Learning and Image Processing Engineer**, smartR.ai, Edinburgh (UK):
  - Created deep learning pipelines to normalize and match colour profiles between FIBI and H&E histological images.
- 2019: **Post-Doctoral Researcher in Neuroimaging**, The University of Dublin (Ireland):
  - Linked speech patterns to brain volume changes in MCI/AD, exploring speech as an early marker of cognitive decline.
- 2016-2017: **Professional Engineer**, My Therapy Tools Ltd.:
  - Provided professional engineering support to a Horizon 2020 telerehabilitation platform development for brain injury patients.

Education

- 2014-2018: PhD Electronic Engineering, University of York (UK). *Cartesian Genetic Programming Classification of Resting-State fMRI: Towards a Brain Imaging Biomarker for Parkinson's Disease.*
- 2013: MSc Digital Signal Processing, University of York (UK).