Stanford

Tahereh Kamali

Postdoctoral Scholar, Neurology and Neurological Sciences

Bio

BIO

My research interests primarily lie in the design of new machine learning techniques for healthcare and building efficient, robust and scalable technologies that facilitate identification of multimodal biomarkers to diagnose and stage disease, predict and monitor response to therapeutic treatments, and assess disease progression/ recurrence.

HONORS AND AWARDS

- Provost Doctoral Student Award, University of Waterloo, Canada (2014-2015)
- Graduate Research Scholarship, University of Waterloo, Canada (2014-2018)
- Faculty of Engineering Graduate Scholarship, University of Waterloo, Canada (2016-2017)
- Doctoral Thesis Completion Award, University of Waterloo, Canada (2018)

PROFESSIONAL EDUCATION

- PhD, University of Waterloo , Systems Design Engineering (2019)
- M.Sc, Shiraz University , Computer Science (2013)
- B.Sc, Shiraz University , Computer Science (2006)

STANFORD ADVISORS

- John Day, Postdoctoral Faculty Sponsor

LINKS

- Twitter: https://twitter.com/Tahereh_Kamali

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

AI for Healthcare, Neuroimaging, Biomarkers Development

Publications

PUBLICATIONS

- **Cerebrospinal Fluid Proteomic Changes after Nusinersen in Patients with Spinal Muscular Atrophy.** *Journal of clinical medicine*
  Beaudin, M., Kamali, T., Tang, W., Hagerman, K. A., Dunaway Young, S., Ghiglieri, L., Parker, D. M., Lehallier, B., Tesi-Rocha, C., Sampson, J. B., Duong, T., Day, J. W.

2023; 12 (20)

- **Learning Spectral Fractional Anisotropy and Mean Diffusivity Features as Neuroimaging Biomarkers for Tracking White Matter Integrity Changes in Myotonic Dystrophy Type 1 Patients using Deep Convolutional Neural Networks.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Kamali, T., Day, J. W., Deutsch, G. K., Sampson, J. B., Murad, A., Chaufty, J., Parker, D., Wozniak, J. R.
  2023; 2023: 1-4

- **A Multimodal Neuroimaging Feature Extraction Framework for Biomarker Discovery in Myotonic Dystrophies**
  Kamali, T., Day, J., Sampson, J., Murad, A., Chaufty, J.
  LIPPINCOTT WILLIAMS & WILKINS.2023

- **Multimodal fusion of neuroimaging and neuropsych data: A machine learning approach to study brain alterations linked with cognitive domains in DM1**
  Kamali, T., Parker, D., Deutsch, G., Sampson, J., Day, J., Wozniak, J.
  PERGAMON-ELSEVIER SCIENCE LTD.2022: S132

- **Cognitive Impairment Analysis of Myotonic Dystrophy via Weakly Supervised Classification of Neuropsychological Features.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Kamali, T., Deutsch, G. K., Hagerman, K. A., Parker, D., Day, J. W., Sampson, J. B., Wozniak, J. R.
  2022; 2022: 4377-4382

- **Exploring Protein Changes in Cerebrospinal Fluid of Spinal Muscular Atrophy Patients Pre-Nusinersen vs. Post-Nusinersen Treatment using Bayesian Machine Learning Algorithms**
  Kamali, T., Hagerman, K., Duong, T., Parker, D., Young, S., Tang, W., Sampson, J., Day, J.
  LIPPINCOTT WILLIAMS & WILKINS.2022

- **Toward Developing Robust Myotonic Dystrophy Brain Biomarkers using White Matter Tract Profiles Sub-Band Energy and A Framework of Ensemble Predictive Learning.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Kamali, T., Parker, D., Day, J. W., Sampson, J., Deutsch, G. K., Wozniak, J. R.
  2021; 2021: 3838-3841

- **Discovering Density-Based Clustering Structures Using Neighborhood Distance Entropy Consistency** *IEEE TRANSACTIONS ON COMPUTATIONAL SOCIAL SYSTEMS*
  Kamali, T., Stashuk, D. W.
  2020; 7 (4): 1069–80

- **Diagnosis of Myotonic Dystrophy Based on Resting State fMRI Using Convolutional Neural Networks.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Kamali, T., Hagerman, K. A., Day, J. W., Sampson, J., Lim, K. O., Mueller, B. A., Wozniak, J.
  2020; 2020: 1714–17

- **Transparent Electrophysiological Muscle Classification From EMG Signals Using Fuzzy-Based Multiple Instance Learning** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*
  Kamali, T., Stashuk, D. W.
  2020; 28 (4): 842–49

- **Electrophysiological Muscle Classification Using Multiple Instance Learning and Unsupervised Time and Spectral Domain Analysis** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Kamali, T., Stashuk, D. W.
  2018; 65 (11): 2494–2502

- **A Multiple Instance Learning Approach to Electrophysiological Muscle Classification for Diagnosing Neuromuscular Disorders Using Quantitative EMG**
  Kamali, T.
  University of Waterloo.2018

- **A Density-Based Clustering Approach to Motor Unit Potential Characterizations to Support Diagnosis of Neuromuscular Disorders** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*
  Kamali, T., Stashuk, D. W.
  2017; 25 (7): 956–66

- **Automated segmentation of white matter fiber bundles using diffusion tensor imaging data and a new density based clustering algorithm** *ARTIFICIAL INTELLIGENCE IN MEDICINE*

  Kamali, T., Stashuk, D.

  2016; 73: 14–22

- **A Multi-Classifier Approach to MUAP Classification for Diagnosis of Neuromuscular Disorders** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*

  Kamali, T., Boostani, R., Parsaei, H.

  2014; 22 (1): 191–200

- **A Hybrid Classifier for Characterizing Motor Unit Action Potentials in Diagnosing Neuromuscular Disorders** *Journal of Biomedical Physics & Engineering*

  Kamali, T., Boostani, R., Parsaei, H.

  2013

PRESENTATIONS

- Myotonic Dystrophy and the Brain: Causes, Effects, and Treatment - Myotonic Dystrophy Foundation (2020)

- Developing Novel Robust Myotonic Dystrophy Brain Biomarkers: A Machine Learning Approach using Diffusion Tensor Imaging Data - Myotonic Dystrophy Foundation (2021)

- Drug Response Prediction for SMA Patients Under Treatment with Nusinersen : An Exploratory Approach using Graph-based Supervised Machine Learning Algorithms - CureSMA (2022)