Seyhmus Guler

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Experience

Research fellow, *Department of Psychiatry*   March 2020 – Present
Massachusetts General Hospital and Harvard Medical School   *Boston, MA*
- Neuroimaging (MRI, fMRI, DTI) data acquisition, cleaning, and analysis using tailored pipelines.
- Project leader: Examining the effect of brain stimulation and acupuncture on chronic low-back pain.
- Exploring bio-markers of pain in neuroimaging data using machine learning techniques.

Research fellow, *Department of Radiology*   Nov. 2016 – Feb. 2020
Boston Children's Hospital and Harvard Medical School   *Boston, MA*
- Developed motion correction and missing-data completion strategies for fMRI and tensor data.
- Analyzed resting-state fMRI data to show functional abnormalities in children with autism vs healthy children.
- Designed and implemented fMRI-neurofeedback protocols to train and improve brain function via feedback.

Lecturer (part-time), *Department of Electrical and Computer Engineering*   June 2016 – Aug. 2019
Northeastern University   *Boston, MA*
- Created curriculum for and taught Noise and Stochastic Processes (EECE3468) three semesters; and Introduction to Linear Algebra and Probability for Data Science (DS5020) one semesters. Evaluations available upon request.

Research assistant, *Department of Electrical and Computer Engineering*   Sep. 2011 – Oct. 2016
Northeastern University   *Boston, MA*
- Formulated, solved, and tested optimization methods for optimized current delivery in transcranial direct current stimulation (tDCS) and electrocorticography (ECoG) stimulation.

Software Skills

Programming languages: Python, Matlab, Bash, R, C++, HTML, CSS, JavaScript
Python libraries: Pandas, NumPy, SciPy, Seaborn, Matplotlib, Scikit-learn, PyTorch, Flask, NiPy, Requests
Version control/publication tools: Git, Svn, LaTeX, Microsoft Office, Mendeley
Neuroimaging data analysis: FSL, Nipype, Freesurfer, fMRIPrep, SPM, CONN, BIDS, ANTs, Weka, Nilearn, GIFT, Monai
Hands-on experience : Linux workstations, Computer clusters, Operating an MRI scanner, tDCS setup and application

Education

Ph.D. in Electrical Engineering   Sep 2011 – Oct 2016
Northeastern University   *Boston, MA*
   Selected courses: Pattern recognition, Machine learning, Detection and estimation theory, Numerical optimization, Combinatorial optimization, Information theory, High performance computing, Graph theory, Finite element method.

B.Sc. in Electrical and Electronics Engineering   Sep 2006 – Jun 2011
Bilkent University   *Ankara, Turkey*
   Selected courses: Algorithms and programming I-II, Fundamental structures of computer science I, Computer networks, Telecommunications I-II, Electromagnetics I-II, Digital signal processing

Awards and Honors

Graduate research assistantship (GRA), Northeastern University, Boston, MA (2011-2016)
Full scholarship for undergraduate studies, Bilkent University, Ankara, Turkey (2006-2011)
Ranked 210th in 2006 National University Entrance Exam, Turkey ($\sim$ 1.5 million students)
Ranked 5th (Silver medalist) in 13th National Mathematics Olympiad, TUBITAK, Ankara, Turkey ($\sim$10k students)
Ranked 21st (Silver medalist) in 7th National Secondary School Mathematics Olympiad, TUBITAK, Ankara, Turkey

Publications

🎓– Four journal papers, three conference papers, and six conference abstracts, all peer-reviewed.

Languages and Interests

Languages: Kurdish (Native), Turkish (Native), English (Fluent), Spanish (Beginner)

Interests: Dancing, Racquetball, Jump rope, Hiking, Soccer, Coding, Chess