

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 semester. 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, GitHub, 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, Compute clusters, Operating an MRI scanner, tDCS setup and application

EDUCATION

- Ph.D. in Electrical Engineering** Sep 2011 – Oct 2016
Northeastern University Boston, MA
- Thesis title: *Brain Stimulus Pattern Optimization Using Scalp and Cortical Electrode Arrays*. Advisor: Dana H. Brooks.
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 (~ 1.5 million students)
Ranked 5th (Silver medalist) in 13th National Mathematics Olympiad, TUBITAK, Ankara, Turkey (~10k students)

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