Post-Doctoral Position at GT-Bionics Lab
School of Electrical and Computer Engineering
Georgia Institute of Technology, Atlanta, Georgia, USA

A post-doctoral position is available in GT-Bionics Lab at the School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, where we design and develop state-of-the-art wireless, implantable, and wearable medical instruments. A number of research projects have been recently funded by the NIH and NSF to develop advanced digital signal processing and machine learning algorithms, novel software applications, and highly-efficient smart embedded systems for a variety of neuro-rehabilitation and assistive technologies, derived from the original Tongue Drive System (TDS). TDS is an unobtrusive, wireless, and wearable device capable of tracking the tongue position in real-time. These projects involve brain-tongue-computer interfacing (BTCI) to utilize the robust neuromuscular control and rapid, intuitive, and dexterous tongue kinematics for environmental control, speech and language therapy, and effective augmentative and alternative communication. The tongue’s direct natural hotline to the brain via cranial nerves obviates the need for highly invasive access to the brain, while its speed, dexterity, and accuracy far outpaces the EEG-based methods. We intend to find new ways to tap into the inherent capabilities of the human tongue and oral motor control, and combine it with audiovisual biofeedback and other sensory and motor modalities to impact the brain neuroplasticity towards improving the patients’ quality of life.

The research work is conducted in a unique multi-disciplinary and collaborative atmosphere among engineers, rehabilitation professionals, clinicians, neuroscientists, caregivers, and individuals with disabilities or neurological disorders. This is a collaboration between Georgia Tech, Northeastern University, Georgia State University, Emory University, and Shepherd Center in Atlanta, GA, USA.

The candidate must possess a doctoral degree in electrical, computer, or biomedical engineering and demonstrate excellence in problem solving, writing (publications), and communication (presentations) skills. Strong background in digital signal processing, machine learning, classification, pattern recognition, coding, statistical analysis, and embedded systems is necessary. Additional experience in electromagnetics, medical instrumentation, circuit design, wireless communication, rehabilitation engineering, mobile app development, human-computer interaction, rapid prototyping, and computer interfacing is preferred. The successful candidate should be highly motivated, ambitious, competitive and yet cooperative, meticulous in paying attention to details, and capable of working as a team member, while being independent. Candidates with prior mentorship experience are preferred.

Interested individuals should send their detailed CV, three sample publications, and the names and contact information of two references by email to Prof. Maysam Ghovanloo (mgh@gatech.edu). Review of applications will start immediately and continue until the position is filled.