

## MIRIAM MAKHLOUF

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### EDUCATION

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#### HARVARD UNIVERSITY AND MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Division of Health Sciences and Technology, Cambridge, MA.

September 2006- Present

**Ph.D. Candidate:** *Developing computational neural network models of the motor control of speech and movement disorders.*

#### BOSTON UNIVERSITY, Boston, MA.

BA. Computer Science. Cum Laude.

September 2000-May 2004

Cognitive and Neural Systems post-graduate courses.

### EXPERIENCE

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#### Ph.D. Candidate

September 2006 - present

**Martinos Center for Biomedical Imaging**, Massachusetts General Hospital, Charlestown, MA.

**Department of Cognitive and Neural Systems**, Boston University, Boston, MA.

**Center for Laryngeal Surgery and Voice Rehabilitation**, MGH, Boston, MA.

*Using computational neural network modeling and multi-modal neuroimaging techniques to improve the diagnosis and treatment of speech and movement disorders. Work is carried out in Dr. Blood's Motor Control Lab, Dr. Guenther's Speech Lab, and Dr. Hillman's Voice Lab.*

#### Research Assistant

September 2004 - September 2006

**Martinos Center for Biomedical Imaging**, MGH, Charlestown, MA.

*Performed functional and diffusion magnetic resonance imaging and systems-level investigation of the motor control disorder, dystonia.*

#### Research Assistant

July 2003 - July 2004

**Department of Cognitive and Neural Systems**, BU, Boston, MA.

*Modeled effects of short-term training and learning on auditory localization and spatial plasticity in Dr. Shinn-Cunningham's Auditory Neuroscience Lab.*

#### Systems Modeler

June 2001 – September 2001

**Force Electronics Systems Center**, Hanscom Air Force Base, MA.

*Created two operational architecture models using a hierarchical colored Petri net tool. These models were used to solve performance problems of a distributed command and control system.*

### PUBLICATIONS/ABSTRACTS/PRESENTATIONS

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- Blood A, Tuch D, Makris N, **Makhlouf M**, Sudarsky L, Sharma N., "White matter abnormalities in dystonia normalize after botulinum toxin treatment", *NeuroReport* 2006; 17(12):1251-5.
- Blood A, Kuster J, Multhaupt-Buell T, Makris N, **Makhlouf M**, Sudarsky L, Sharma N. "Further evidence for pallidal output abnormalities in cervical dystonia", *Movement Disorder Society*, June 2009.
- **Makhlouf M**, Sharma N, Multhaupt-Buell T, Kuster J, Hillman R, Blood A. "Evidence for brain microstructural abnormalities in spasmodic dysphonia", *SfN*, November 2008.
- Blood A, Flaherty A, Sudarsky L, Wernick-Robinson M, Tlumacki M, **Makhlouf M**, Sharma N, "Evaluation of the Lerman Minerva Cervical Orthosis for treatment of cervical and upper truncal dystonias", *Movement Disorders* 20, s30-s31 p104 Suppl. 10, 2005.
- Blood A, Sharma N, Tuch D, Benner T, Makris N, **Makhlouf M**, Sudarsky L, "Evidence for altered microstructural integrity in focal dystonia", *Annual Meeting of the Organization for Human Brain Mapping*, June 2005.

- **Makhlouf M**, “Magnetic resonance imaging and computational modeling studies to improve the management of spasmodic dysphonia”, Proposal Advisory Committee meeting, December 2008.
- **Makhlouf M**, “Diagnostic and Treatment Assessment of Spasmodic Dysphonia using Functional and Diffusion Magnetic Resonance Imaging Technologies”, MGH Martinos Center, December 2005.
- **Makhlouf M**, “Modeling the role of Basal Ganglia in Neuromotor Control”, submitted to NSF Graduate Research Fellowship Program, November 2005.
- **Makhlouf M**, “Investigation of Speech and Voice Disorders using Multimodal Imaging Technologies”, submitted to NSF Graduate Research Fellowship Program, November 2007.

## **SPECIAL DISTINCTIONS**

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**Advanced Multimodal Neuroimaging Training Program scholar** **September 2009 - Present**

**NIH speech and hearing bioscience and technology scholar** **September 2006 - September 2009**

## **PROFESSIONAL AFFILIATIONS**

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**Society for Neuroscience** **September 2004 – Present**

## **LEADERSHIP AND SKILLS**

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### **Multicultural Experience**

*Since I was young I traveled extensively to Europe, Africa and Latin America. Living with local families enabled me to better understand and communicate with people from other cultures.*

### **Co-Founder** Flamenco@MIT

**June 2008 – Present**

*Director of marketing and advertisement for two professional concerts where audience attendance exceeded 1000 for each concert.*

### **Eye Opener Volunteer, Museum Of Science, Boston, MA.**

**September 2005 – September 2006**

*Conduct weekly guided tours to groups of inner-city second grade students through the museum, encouraging their exploration and discovery of science, technology, engineering and mathematics.*

### **Languages**

*Native speaker of **English**. Proficient in **Spanish**.*