GEOFFREY NEWMAN

geoffrey.webhop.me | geoffrey.nemwan@gmail.com

EDUCATION

2008 - Present **PhD Candidate, Biomedical Engineering** (Expected Summer 2015)
Johns Hopkins University (JHU) – Baltimore, Maryland

2004 – 2008 **Bachelor of Engineering, Biomedical Engineering**
City College of New York (CCNY) – New York City, New York
Minor: Applied Mathematics
GPA: 3.6/4.0 (Magna Cum Laude)

RESEARCH EXPERIENCE

Research Assistant – *JHU.* Brain Computer Interface, **PI**: Nitish Thakor, 2008 – Present

- Employed **graph theory** and **signal processing** techniques to solve **neuroscience** problems
- Utilized **machine learning** techniques to decode movement intent from neural recordings

Research Assistant – *CCNY*. Eye Movement and Vision, **PI**: Jay Edelman, 2006 – 2008

- Investigated **movement planning** of saccades via eye tracking data and non-invasive neural recordings
- Created a **graphical user interface** to simplify data preprocessing

TEACHING ACTIVITES

2011 - 2012 Teaching Assistant, *Johns Hopkins University*

- Biomedical Instrumentation: Assisted 10 groups of 4 students in **circuit design** and debugging, in addition to **Computer Aided Design**
- System Bioengineering – Neuroscience: Led weekly recitation for 50 students

2004 - 2006 Peer-Led Team Learning Project - Workshop Leader, *City College of New York*

- **Guided** classes of 6-12 undergraduate students through chemistry problems
- **Taught** generally applicable problem solving strategies
- Encouraged **teamwork** and participation

RELEVANT COURSEWORK

- CAD of Digital VLSI
- Matrix Analysis
- Learning Theory
- Neuroscience
- Introduction to Data Science (Coursera)
- Digital Signal Processing
- Wavelets and Filter Banks
- Filtering and Smoothing
- Random Signals
- Statistical Theory

SELECTED PUBLICATIONS

Newman G, Fifer M, Benz H, Crone N, Thakor N, “Eigenvector centrality reveals the time course of task-specific electrode connectivity in human ECoG.” Conference proceedings: IEEE EMBS Neural Engineering Conference. Apr, 2015. (In Publication).

Newman G, Aggarwal V, Schieber M, Thakor N, "Identifying neuron communities during a reach and grasp task using an unsupervised clustering analysis." Conference proceedings: Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Aug, 2011: 6401-4.

Kelly S, Foxe J, **Newman G**, Edelman J, "Prepare for conflict: EEG correlates of the anticipation of target competition during overt and covert shifts of visual attention." European Journal of Neuroscience. May, 2010: 31, 1690-1700.

HONORS / AWARDS

2008 - 2010 NIH Neuroengineering Training Initiative Training Fellowship
2008 Howard Hughes Undergraduate Research Award
2004 - 2008 Whitaker Foundation Undergraduate Research Scholarship

Journal Experience: Medical & Biological Engineering & Computing – Assistant Managing Editor (2013 – Present), Reviewer (2014-Present)

Computer Skills: Matlab, C++, Java, LaTeX, Python, Qt, HTML, Photoshop/GIMP, Linux, Cloud Computing (Amazon EC2, S3, Map Reduce), SQL, Cadence VLSI design tool, PTC Creo, SolidWorks, AutoCAD

Affiliations: Institute of Electrical and Electronics Engineers (IEEE), Society for Neuroscience (SfN), Tau Beta Pi Engineering Honors Society (TBP)