

# GEOFFREY NEWMAN

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## 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

## 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 ACTIVITIES

- 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)