Daniel M. Jeck

1020 Park Avenue #406
Baltimore, MD 21201
919-949-1779
danny.jeck@gmail.com

EDUCATION

PhD Student, August 2012 to present
Johns Hopkins University Baltimore, MD
Doctoral Board Oral Exam Completed: 07/2014

B.S. in Biomedical Engineering; Summa Cum Laude, May 2009
North Carolina State University Raleigh, NC
Bioinstrumentation Concentration
GPA: 3.96 / 4.00

PUBLICATIONS

Jeck, D.; Niebur, E., "Closed form jitter analysis of neuronal spike trains," Zanvyl Krieger Mind/Brain Institute, Johns Hopkins University, Tech. Rep. DJEN-2015.1, 2015, arXiv:1502.07907 [q-bio.NC].

Jeck, D.; Niebur, E., "Neuronal common input strength is unidentifiable from average firing rates and synchrony," *Information Sciences and Systems (CISS), 2015 49th Annual Conference on* , pp.1,3, March 2015

Jeck, D.; Niebur, E., "Closed form jitter methods for neuronal spike train analysis," *Information Sciences and Systems (CISS), 2015 49th Annual Conference on* , pp.1,3, March 2015

WORK EXPERIENCE

Johns Hopkins University, Baltimore, MD
PhD Student, August 2012 to present

- Developing a psychophysical experiment to test underlying assumptions of saliency models in research participants without task training
- Developed an accelerated jitter algorithm for the detection of synchrony at fine time scales in neural recordings
- Built a Spiking Neuronal Models to analyze the inference of changes in shared input due to changes in synchrony measures

3 Phoenix Inc, Wake Forest, NC
Systems Engineer: June 2009 to June 2012

- Developed the towed array design for the passive detection portion of the Torpedo Warning System (TWS), deployed on USS George H.W. Bush (6/13/2013)
- Analyzed and modeled sparsely populated broadband sonar arrays for the purposes of range estimation. Analysis informed array design and performance predictions of the TWS

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3 Phoenix Inc (cont'd)

- Designed a towed sensor array shape estimation algorithm based on heading sensors and MEMS gyroscopes implemented on the TWS
- Sonar array algorithm design, including beamforming, the MUSIC algorithm, and Kalman filtering
- Developed a set of spectral features and a classifier to label range estimates as low-quality
- Studied convex optimization, simulated annealing and other stochastic optimization methods
- Developed a lake test plan for a sonar array and low-level processing implemented in November 2011
- Developed an improvement in passive torpedo processing based on using a spatial window for the beamspace MUSIC algorithm

Engineering Entrepreneurs Program, *NC State University,* Raleigh, NC
medCount eTeam Leader: August 2008 to May 2009

- Developed a low-cost tuberculosis diagnostic device for use in third world countries
- Managed eight eTeam members in developing image processing software for the device
- Wrote a business plan for launching the device
- Received $3000 in grant funding
- Team received $10,000 in prize money from the NC state eGames

Statistical Signal Processing Applied to Cochlear Implants and Subsurface Sensing (SSPACISS) Laboratory, *Duke University***,** Durham, NC
Cochlear Implant Research Assistant: May 2007 to August 2007

- Initiated a project to better train cochlear implant subjects to hear music
- Edited assembly code for a cochlear implant research device
- Wrote accompanying Visual Basic and MATLAB code
- Resynthesized implant signals into simulated audio

Brain Imaging and Analysis Center, *Duke University***,** Durham, NC
Research Assistant: June 2006 to August 2006

- Programmed Stimuli for fMRI research using MATLAB
- Ran subjects for fMRI experiments

Radiation Oncology Lab, *University of North Carolina,* Chapel Hill, NC
Lab Technician: June 2005 to August 2005

- Worked under a sterile hood
- Prepared Bacto-agar plates
- Cleaned glassware using an autoclave
- Monitored water levels in incubators and water baths and liquid nitrogen levels for long term cell storage

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HONORS:

- 1st Place NC State eGames (Athena, Calliope, Daedalus, Zeus awards) totaling $10,000
- 2nd Place Carolina Challenge Business Plan Competition - $7,500
- Plexus Entrepreneurship Award - Given each semester to best senior design final presentations
- Guy Kawasaki Audience Choice Award - senior design final presentation award
- BMEidea stipend - $500 towards the development of a biomedical device awarded annually
- Featured on the front page of the Raleigh News & Observer, Charlotte Observer, NCSU News Services, Daily Tarheel, Spring 2009
- Dean's List 2005-2009

ACTIVITIES:

- Triangle Flying Disc Association Winter & Summer League 2002 - 2012
- Universities Study Abroad Consortium Summer Program**,** Chengdu, China; Summer 2008
    - Classes in intermediate conversation, reading and writing Mandarin Chinese
    - Travel to Beijing and surrounding areas
- NCSU Ultimate Frisbee 2005-2008

SKILLS:

Computer: MATLAB, Assembly, Visual basic, JAVA, basic HTML, and basic JavaScript
Business: Grant writing, team management, business plan writing, and market research
Language: Intermediate Mandarin Chinese and Spanish
Laboratory: Competent in a wet lab environment