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RICHARD Z. SHEN

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EDUCATION

New York, NY **New York University** **Sep 2014 – Dec 2016**

M.S. in *Electrical Engineering*

- Areas of Specialization: Signal Processing, Machine Learning, Bioinstrumentation
- Graduate Coursework: Data Structures and Algorithms, Probability and Stochastic Processes, Matrix theory
- Relevant Projects: Keyboard Visualizer, EKG Bioinstrumentation Amplifier, Cell Fluid Volume Modeling

New Brunswick, NJ **Rutgers University** **Sep 2010 – May 2014**

B.S. in *Biomedical Engineering*, Minors: Mathematics/Psychology

- Undergraduate Coursework: Probability theory, Linear Algebra, Tissue Engineering, Drug Delivery , Kinetics and Thermodynamics, Transport Phenomena

PROFESSIONAL AND RESEARCH EXPERIENCE

Researcher/Collaborator **Stanford University** **Jan 2016 – Current**

Stanford Crowd Research Collective

- Working with Michael Bernstein to apply analytics and machine learning to Daemo, a self-governed crowdsourcing marketplace
- Technologies: AngularJS, Django. PostgreSQL

Teaching Assistant **New York University** **Sep 2015 – Dec 2015**

- Course: EL 6303 Probability and Stochastic Processes

SoSC STEM Teaching Fellow **New York University** **Jun 2015 – Nov 2015**

- Contributed in the development and implementation of a STEM program involving electrical engineering, programming and wireless communication that impacted over 1000 students in the NYC area
- Taught programming concepts using Arduino Unos and integrated technologies such as RFID and WIFI shields, parallax robot kits and IR/FT transmitters/receivers

Senior Design Project **Rutgers University** **Sep 2013 – May 2014**

- Collaborated with Dr. John K-J Li to develop a non-invasive monitor for hypertension
- Created a MATLAB program to automatically calculate pulse transit time (PTT) from the ECG waveform by using a peak-detection algorithm

Research Assistant **Rutgers University** **Jan 2012 – Dec 2012**

- Created a GUI with MATLAB that modeled the dynamics of alcohol absorption in the body
- Utilized ImageJ to record the number of live/dead/transfected cells using filters and edge detection

PROJECTS

Fun-thesizer (JavaScript, HTML5/CSS3)

- Keyboard visualizer using the Web Audio API that can play/draw sounds with varying audio filters applied
- Integrated tuna.js library to apply filters to input signal

Audio Effect Implementations (Python)

- Implemented various effects (AM modulation, reverb, distortion) in python using the PyAudio library

EKG Bioinstrumentation Amplifier (MATLAB, LabVIEW)

- Constructed an EKG using OP amps, DAQ hardware (USB-6009) and filtering done in MATLAB

Non-invasive Hypertension Monitor (MATLAB, Arduino)

- Utilizes a pressure transducer in order to detect the pulse pressure in the radial and carotid arteries in order to determine arterial compliance

LANGUAGES AND TECHNOLOGIES

Programming Languages: Python, SQL, Java, Ruby, MATLAB, JavaScript
Web Technologies: HTML5/CSS3, jQuery, Bootstrap, Django
Software/Other: Git/Github, Bash, Linux (Ubuntu), Sublime Text, Sqlite, Jupyter, Microsoft Office