9 Aldrich Way, West Windsor, NJ
Phone: (609)-375-5016

RICHARD Z. SHEN

https://github.com/Souloist
Email: rzs207@nyu.edu

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

Coding Advisor **Codecademy** **Feb 2016 – Current**

- Taught programming languages such as Python, Java, Ruby, JavaScript, SQL and version control with Git
- Reviewed coding topics with new students one-on-one and aided in learning programming fundamentals.

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

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 to detect the pulse pressure and determine arterial compliance
- Filtered signal using customized Butterworth filter to eliminate noise within a frequency range

LANGUAGES AND TECHNOLOGIES

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