EDUCATION

M.S. in Engineering, Duke University, GPA: 3.80

2016

Advisor: Dr. Nimmi Ramanujam (BME), Dr. Larry Carin (ECE)

B.Sc. in Biomedical Engineering, NC State University, GPA: 3.94

2014

Bioinstrumentation Concentration. Minor in Piano Performance.

WORK EXPERIENCE

Data Scientist, Automated Insights

2017 - Pres.

- Adapting and implementing machine/deep learning solutions to improve the generation of personalized content from data in the Wordsmith web app.
- Text CNNs, LSTMs, Sentence Vectors, N-Gram Models, SVMs, Topic Modeling

PROJECTS

Deep Learning for Threat Detection, Duke University, Dr. Larry Carin 2016 - 2017

- Created a semi-supervised, multi-view region-based CNN algorithm for threat detection in x-ray scans of airplane luggage using Python and TensorFlow.
- First implentation of handgun detection in x-ray images, will deploy in 2018.

Diagnostic Cancer Imaging, Duke University, Dr. Nimmi Ramanujam 2014 - 2016

- Designed a multispectral imaging system to predict malignancy of breast cancer margins. Analysis and Monte-Carlo ray tracing in Matlab and *Python*.
- Achieved an AUC of 0.72 with a random forest implementation.

Home Health Monitoring, NC State University, Dr. Andrew DiMeo 2013 - 2014

- Invented and produced a wearable device to detect pulmonary edema in patients with congestive heart failure. Embedded system filtering in C++.
- Earned first place at joint NC State/UNC Senior Design Competition.

TECHNICAL SKILLS

Programming Languages: Python (TensorFlow), R, LATEX, Bash, HTML5, CSS, C/C++

Machine Learning: Neural networks, support vector machines, semi-supervised learning, stochastic optimization, clustering, tree-based methods

Statistical Methods: Bayesian inference, regression models, hierarchical models, hypothesis testing, dimensionality reduction, matrix factorizations

Selected Coursework: Linear Systems, Digital Signal Processing, Numerical Linear Algebra, Vector Spaces and Applications, Bayesian Statistics, Multivariate Analysis

OUTREACH

High School Tutor, Student U, Durham, NC.	2015 - Pres.
FIRST Lego Robotics Coach, Student U, Durham, NC.	2014 - 2015
Engineering Ambassador, NC State University.	2011 - 2013

HONORS

NSF GRFP Honorable Mention (2016), James B. Duke Fellowship (2014), NC State Goldwater Nomination (2013), NC State Caldwell Fellow (2010)