

# BRODY KUTT

## ARTIFICIAL INTELLIGENCE AND DATA SCIENTIST

### CONTACT

✉ brodykutt@gmail.com  
🌐 www.brodykutt.com  
☎ 734-212-6767  
📍 Permanent Residency:  
Michigan  
in www.linkedin.com/in/brodykutt  
📄 bkutt

### SKILLS

**PROGRAMMING LANGUAGES:** Python, C, Java, Scala, C++, Assembly, MATLAB, R, Bash, SQL, Verilog, VHDL, LaTeX, Prolog

**SOFTWARE SKILLS:** IPython/Jupyter, Spark, TensorFlow, Hadoop, Adobe Creative Suite, OrCAD Capture CIS, Mathematica, Code Composer Studio, Quartus II, Weka, OpenCV

**SCIENTIFIC SKILLS:** Machine Learning, Deep Learning, Circuit Analysis, PDEs, Computer Vision, Software Development, Big Data, Biomathematics, Statistics, Parallel Computing, Algorithmic Analysis, Hierarchical Temporal Memory, Embedded Systems Design, Research, Public Speaking

### AWARDS

#### School of Mathematical Sciences Graduating Research Scholar Spring 2018

Awarded by faculty member nomination, this recognizes graduating students that have conducted research and have disseminated research to the public.

#### 2016-2017 RIT Outstanding Undergraduate Scholar Fall 2016

This award represents the top less than 1% of students to ever attend RIT in terms of academic achievement, success in research or co-op, passion for their work and dedication to excellence.

#### We the People State Champion Spring 2013

This is a testament to my leadership, comfort with public speaking, ability to communicate effectively and my ability to work effectively under intense pressure.

### ACTIVITIES

#### Collegiate Science Technology Entry Program (CSTEP)

- Personal Math/CS Tutor - Jan 2015 to Sep 2017  
Provide consistent academic help for a student throughout the semester.

### EDUCATION

#### Rochester Institute of Technology, Rochester NY

BS/MS Dual Degree Computational Mathematics/Computer Science 2018

Minors: Electrical Engineering, Japanese

Summa cum laude

### EMPLOYMENT

#### Nu.AI Laboratory

Rochester, NY

AI Scientist

Sep 2017 to May 2018

- Conducted state-of-the-art neuroscience-inspired AI research which culminated into a successful thesis currently in review for publication.

#### Palo Alto Networks

Santa Clara, CA

Data Science Intern

May 2017 to Aug 2017

- Built and prepared malicious JavaScript dataset with several million entries.
- Designed new models and software that greatly improved upon the previous classification system.
- Published a technical summary for the official Palo Alto Network blog.

#### Florida Institute of Technology

Melbourne, FL

Mathematical Biology/Data Science Researcher

May 2016 to Aug 2016

- Discovered genomic subtypes of melanoma using novel machine learning methodology.
- Developed a stochastic model of tumor aggressiveness to better estimate mitotic index.

#### EnerNOC

Boston, MA

Software Engineering Intern

May 2015 to Aug 2015

- Built new internal database framework using Hadoop and Impala.
- Built general purpose data fitting library code to be used company wide.

### PROJECTS

#### Toward An Unsupervised, Incremental, Streaming and One-Shot Visual Class-Based Learning and Recognition System

Mar 2018  
to Current

A ongoing collection of personal research experiments and tools in the effort to design a neuroscience-inspired superior vision system built in conjunction with the theoretical computational model of neocortex known as hierarchical temporal memory theory.

#### Using High-Order Prior Belief Predictions in Hierarchical Temporal Memory Theory for Streaming Anomaly Detection

Sep 2017 to  
May 2018

A novel framework for streaming anomaly detection that can be built upon any underlying time-series modeling algorithm that has been shown to redefine state-of-the-art performance on a popular streaming anomaly benchmark. A publication is currently in review.

#### Handwritten Math Recognition System

Jan 2017 to May 2017

Fully functioning classification, segmentation and parsing system for recognizing handwritten mathematical expressions. The technologies used include custom trained deep CNNs and a custom designed dynamic programming theoretical framework.

#### Human Activity Recognition Application

Jan 2017 to May 2017

An Android smartphone application built with the purpose of recognizing the user's activity from the accelerometer and gyroscope sensor output. The technologies used for analytics include a custom built deep LSTM network.

#### Interalgorithmic Consolidation for Pattern Recognition Applied to Cancer Genomic Databases

May 2016 to  
Jul 2016

An explorative method on ultra high-dimensional data for overall knowledge gain on the feature set without algorithmic bias. Applied to melanoma cell line mRNA expression data. This work has been published and presented at several academic conferences.

#### Monte Carlo Tree Search Algorithmic AI

Jan 2014 to May 2014

An artificially intelligent game module for an online version of the board game "Gobblet" utilizing the MCTS algorithm while also implementing pruning, GPU acceleration and statistical upper confidence bounds.