

## Education

**University at Buffalo** - M.S. Computer Science

December 2015

*Machine Learning, Data Analytics, Statistical Inference, Bayesian Networks*

**Stony Brook University** - B.S. Computer Science

May 2013

## Experience\*

**UB Data Science and Machine Learning Research Group**

Feb 2015 – Dec 2015

*Researcher*

[www.cse.buffalo.edu/ubds](http://www.cse.buffalo.edu/ubds)

- Researched under Dr. Varun Chandola in the University at Buffalo Computer Science department.
- Computed regression lines and a K-means clustering algorithm in order to analyze the similarities and differences of chronic kidney disease progression between 50,000+ patients.
- Contributed learnings on results of ML when applied to the field of medicine in weekly meetings.

**Computer Science Engineering 219**

Feb 2013 – May 2013

*Teaching Assistant*

- Led 50+ undergraduate students in weekly sessions that involved coding (including Java, C, and MIPS), homework, assignments, and term project.
- Taught personal office hours for 200+ hours, going above and beyond by investing 3x the average expected teaching time expected of a TA.
- Covered essential fundamental concepts including OOP, inheritance, and GUIs.

## Projects

**Pokémon Genetics Probability Calculator 2.0**

November 2019 – present

*Java, Java Swing*

- Implemented an additional new permutations algorithm taking on a different approach to computing for probabilities, as well as redesigned a new UI.
- Includes the Everstone item for user selection, potentially increasing existing probabilities by 25.
- Coded a program to efficiently process and output 153+ thousand possibilities.

**Pokémon Genetics Probability Calculator**

September 2017 – October 2019

*Java, Java Swing*

- Developed a combinations algorithm to compute outcomes when breeding 2 Pokémon in a Pokémon game, handling 14+ different parameters that influence the offspring's resulting stats.
- Coded a program capable of efficiently processing and outputting up to 131+ million possible combinations for every possible scenario.
- Developed a specialized probability equation that predicts the chances of the most likely results.

**Forensic Analysis with PGMs**

May 2015

*Matlab*

- Analyzed a record of 6000+ handwritten samples from elementary school students to determine if the style of a handwritten sample is natural or faked.
- Programmed a Bayesian Network algorithm to determine the conditional dependencies between handwriting features and a Gibbs Sampling algorithm to find the ideal number of samplings.

**Face Recognition & Detection**

May 2014

*Matlab*

- Computed Fisherface dimension reduction algorithms on 165 images in order to classify them using Nearest Neighbor, resulting in an average 20% lower misclassification rate than an Eigenface dimension reduction benchmark.
- Implemented a down-sampling technique, reducing computational complexity by more than half.

## Skills & Languages

Java, C/C++, MATLAB, Python, HTML, CSS, JavaScript, Git