



Education

University of Illinois at Urbana-Champaign | Champaign, IL

AUG 2017-MAY 2022

Doctor of Philosophy in **Computer Science: Machine Learning & Bioinformatic**

GPA: **4.00** / 4.00

Brandeis University | Waltham, MA

SEP 2013-MAY 2017

Bachelor of Science in **Computer Science** and **Neuroscience**

GPA: **3.96** / 4.00 (Overall) **4.00** / 4.00 (CS)

Awards: **Phi Beta Kappa (Junior), Schiff Fellowship, Collaborative Research Grant, Summa Cum Laude**

Experience

SOFTWARE ENGINEERING INTERN | GOOGLE

MAY. 2018-AUG. 2018

- ▶ Worked in the Google Accelerated Science Team at Google AI where we collaborated with chemists and biologists in universities/labs to accelerate drug discoveries with image based cell screening
- ▶ Developed a Generative Adversarial Network based model remove batch-to-batch effect in cell imaging including dye intensity, imaging device, lighting condition etc. By transferring images to the same batch ("style"), that variations in downstream representations are better correlated with the drug effect instead of the experimental artifacts
- ▶ Opened source the implementations and contributed to Tensorflow and Tensorflow Model

GRADUATE RESEARCH ASSISTANT | UIUC

AUG. 2017-PRESENT

- ▶ Worked on various research topics in bioinformatics and computational chemistry using a data driven neural network approach with Prof. Jian Peng
- ▶ Research topics include protein sequence profiling, protein structure contact prediction, and graph based neural network for molecule property prediction

SOFTWARE ENGINEERING INTERN | UBER

MAY. 2017-AUG. 2017

- ▶ Investigated different machine learning models to predict couriers' states during food pickup for Uber Eats trip and identified key data quality issues causing underperformance in various models.
- ▶ Developed Kernel Conditional Random Field for time-series prediction problem drawing interest from multiple teams and won **the first prize** for Uber's first internal machine learning poster session.

SOFTWARE ENGINEERING INTERN | UBER

JUN. 2016-AUG. 2016

- ▶ Created and designed an internal tool for mobile developers to investigate UI test failures on Uber's continuous integration platform in full speed by aggregating and synchronizing test logs and videos
- ▶ Reduced debugging time for mobile engineers by more than 50%

UNDERGRADUATE RESEARCH ASSISTANT | BRANDEIS UNIV.

MAY. 2015-MAY. 2017

- ▶ Worked on various research topics around computer science, biology and computational linguistic using neural network/deep learning, statistical machine learning and graph algorithms.
- ▶ Research topics include natural language dialogue generation, graph spatial pattern extraction for protein structure and neural morphology, and protein sequence embedding.

CODEU PARTICIPANT | GOOGLE

MAR. 2015-AUG. 2015

- ▶ Worked with three other participants to create a contact transfer Android application that transfers users' contact and social platform info with NFC or QR Code
- ▶ Presented the application at Google Tech Corner and won **the runner-up for Engineer's Choice**

Projects

ON-GOING RESEARCH

AUG. 2017-PRESENT

- ▶ Rational Graph Neural Network for Molecule Property Prediction and Generation
- ▶ End-to-End Protein Structure Prediction via 3D-Geometry
- ▶ Neural Memory Network based Protein Sequence Profiling

SPATIAL PATTERN EXTRACTION WITH BIOLOGY APPLICATION

MAY. 2015-AUG. 2017

- ▶ Implemented and optimized graph algorithms to extract pattern in attributed relational graphs
- ▶ Built pattern extracting algorithm for protein 3D structure mining and neuron morphology study
- ▶ Leveraged techniques in word embedding and generate feature vector for each amino acid
- ▶ Project was supported by **Jerome A. Schiff Fellowship**

DISCOURSE PARSING IN CHINESE MESSAGES

JAN. 2016-AUG. 2017

- ▶ Crawled and preprocess text from social network for data analysis and model training
- ▶ Developed various neural network for sentence representation or sentence relation classification
- ▶ Project was supported by **Student/Faculty Collaborative Research Grant**

RESTAURANT REVENUE PREDICTION

APR. 2015

- ▶ Predicted restaurant revenue for TFI, the company behind some of the world's most well-known brands including Burger King and competed with other data scientist on Kaggle
- ▶ **Rank 38th (<2%) among 2257 teams from all over the world**
- ▶ Github project: <https://github.com/WesleyC/RestaurantRevenuePrediction>

JEEVES: MOBILE VIRTUAL ASSISTANT

JUL. 2014-AUG. 2014

- ▶ Created Jeeves, an Android voice-powered virtual assistant for everyday routines
- ▶ Focused on conversational dialogue and provided user a natural interaction with the app
- ▶ Crafted with JavaScript, HTML, CSS, news/weather/gmail API, Bootstrap, AngularJs and PhoneGap
- ▶ **Runner-Up of AVIOS Mobile Speech Application Contest 2015**
- ▶ Github project: <https://github.com/arikalfus/Jeeves>

PERFECT TIC-TAC-TOC PLAYER

MAY. 2015-SEP. 2015

- ▶ Implemented a Tic-Tac-Toe game and a perfect player who will never lose
- ▶ Integrated the python software with Raspberry Pi and breadboard for an hardware game console
- ▶ Github project: <https://github.com/WesleyC/TicTacToe>

FOR MORE

- ▶ <https://github.com/WesleyC>

Courses

- ▶ **ML:** Statistical Machine Learning, Computer Vision, Big Data Analysis
- ▶ **Bioinformatics:** Computational Neuroscience, Bioinformatics, Algorithmic Genomic Biology
- ▶ **System:** Operating System, Distributed Systems, Database Management Systems
- ▶ **Engineering:** Data Structure, Algorithm Design, Compiler, Functional Programming

Skills

- ▶ **Programming skills in** Java, Python, MATLAB, Go, JavaScript
- ▶ **Proficient with** TensorFlow, PyTorch, Hadoop, MapReduce, Spark, Hive, MongoDB, PSQL
- ▶ **Experience in** Big Data Analysis, Distributed System, Android Development, Statistical Machine Learning, Deep Learning, Computational Linguistic, Bioinformatic and Neuron Modeling
- ▶ **Enjoy** farmer's market, photograph, biking, golf, and equestrian