# Yue (Ben) Liu

(1) 217-778-2596 | yuel3@stanford.edu

## EDUCATION

**Stanford University** April 2018 (expected)
*M.S. in Statistics*

**University of Illinois at Urbana-Champaign** May 2016
*B.S. in Applied Mathematics & Statistics, Minor in Computer Science* **GPA**: 3.96/4.00

- **Honors**: Bronze Tablet, Summa Cum Laude, Dean's List
- **Coursework:** Time Series, Bayesian Analysis, Data Structure, Numerical Methods, Data Mining, Machine Learning

## EXPERIENCE

**Here, Inc.** **Berkeley, CA**
*Machine Learning Research Intern-Global Change Detection* June 2016-September 2016

- Conducted investigations on the logistic-regression-based Map-Matcher and designed a KNN-based method to stabilize false positive rate while increasing the recall
- Designed and implemented a deep convolutional neural network in Caffe to do pixel-wise classification and predict missing geometry, road functional class, and speed category using traffic probe data in a map
- Designed and implemented a tool and corresponding user interface in Python and Flask for evaluating the neural networks performance in terms of precision and recall
- Given raw satellite images, constructed a data set using multiple data augmentation methods based on Alexnet paper, and trained a Siamese Network to detect geometry change in a pair of images.

**State Farm Research and Development Center** **Urbana-Champaign, IL**
*IT/System Intern* May 2015-May 2016

- Developed a KD-tree based interpolation algorithm to reorganize 3D point cloud data hence, making data frame more comparable and reducing computational cost by 70%
- Utilized K-Nearest Neighbor, Support Vector Machine and Random Forest machine learning algorithms for multiple gesture classification and improved the prediction accuracy by 60% to 81%
- Captured 80000 frames from a diverse demographic using a 3D sensor and processed point cloud data using PCL
- Used Keras to build convolutional neural networks to detect drivers' distracted behaviors

**Illinois Geometry Lab** **Urbana-Champaign, IL**
*Undergraduate researcher* January 2015-May 2016

- Used Python to stimulate a statistical infection model and explore the relation between a key parameter and infection set growth in Multiple Phase Transitions in Long Range First Passage Percolation
- Simulated Kuramoto model with changing coupling weights in Matlab to model Hebbian Dynamics: found its stable region, fixed points and the relation between the stability of revised model and original Kuramoto model

## PROJECT

- Built a comprehensive metric for a web application based on geo-location, population and agricultural production data to evaluate land value using Climate Corporation API and won the third place in HackIllinois
- Utilized KNN, Tf-idf and TopMine to build a data driven website and ranked first place in ADSA Data Hackthon: Based on Yelp data set, given a city name and potential business type, find the existing most relevant competitors in the same area by Tf-idf and KNN, and provide the topical phrases of corresponding reviews by TopMine
- Participated in 3rd and 4th Annual UChicago Midwest Trading Competition: Using statistical methods such as Linear Regression, Correlation, and ARIMA model in Time Series Analysis to implement *option market making, index tracking, pair trading* and *lead-lag trading* in Java
- Implemented a grid random forest to predict business id based on location and device accuracy in a Facebook check-in

## SKILLS

Language: Python, R, Java, C++, Matlab, SQL, Mathematica
Platform: AWS
Framework: Flask, Caffe