


# Rosie Zou

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## Technical Skills

### Programming

R, Python, Java, C, C++,  
Stata, SQL

### Libraries & Frameworks

Keras, Pandas, Numpy,  
WEKA, Scipy

### Tools

Sketch  
Adobe InDesign

## Business Skills

### Communication

Business Writing  
Digital Marketing  
Public Speaking

### Foreign Languages

Fluent Chinese  
Advanced French  
Advanced Japanese  
Beginner Spanish

## Relevant Courses

Computational Inference  
Stat. Learning - Classification  
Stat. Learning - Regression  
Intro to Artificial Intelligence  
Algorithms  
Operating Systems

## Education

### University of Waterloo

Honours B.CS  
Data Science Option  
Graduation: April 2019

## Work Experience

### Research Assistant, University of Waterloo May 2017 - Pres.

- Implemented, documented, and fully tested a Stata interface for all Random Forest class functions in the WEKA library
- Project and resulting paper explored alternative approaches to statistical inference in social sciences such as politics and economics
- Performed regular software maintenance based on user requests
- Plugin distributed to all Stata users on [www.schonlau.net/stata/](http://www.schonlau.net/stata/)
- Currently implementing a new solution to multi-level classification

### Equity Trading Intern, TD Securities Apr - Dec 2016

- Built data visualization for TD historic trades and order routing trends
- Re-worked latency calculation script used for performance analysis
- Researched various financial databases to compile market reports
- Regularly conducted research and data analysis used for marketing

## Projects

### SpaceX Hyperloop Pod Challenge - Waterloo May - Aug 2017

- Worked on software system of prototype pod that competed in SpaceX's Hyperloop Pod Challenge
- Designed and implemented mathematical models for navigation system using IMU, optical, and photoelectric distance sensors
- Built support vector regression models for raw signal data noise reduction
- Implemented software sub-system for telemetry and navigation
- Co-designed state diagram for entire system
- Archive code available on personal site and github

### CSEye March - Apr 2018

- Designed and implemented new CNN architecture for face verification
- Built model using keras with pre-trained ImageNet weights
- Introduced parameter prediction which improved predictive accuracy
- Final weights trained using Labeled Faces in the Wild database

### Multiple Imputation for Survey Data Apr 2018

- Designed and implemented new multiple imputation algorithm for analysis of latent variables in surveys with ordinal responses
- Implemented, documented, and fully tested a ready-to-install R package
- Project features pooled analysis of parameters using Rubin's Rule

### Financial Data Analysis Apr 2018

- Achieved 0.005 cross-validation error on log-scaled retained earnings using financial data from Quandl
- Tuned the hyper-parameters and compared performances of thin-plate splines, random forest, and gradient boosting