# KARL RUDEEN

## DATA SCIENTIST

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## Skills

**PROGRAMMING LANGUAGES**

Python
R
JavaScript
MATLAB

**TOOLS**

pandas
NumPy
scikit-Learn
Scrapy
Flask
NLTK
Matplotlib
Seaborn
gensim
Keras

**MACHINE LEARNING**

Linear Regression
Classification
NLP
Clustering
Web Scraping

**DATA MANAGEMENT**

SQL
Git
MongoDB
AWS

## Education

**Western Washington University**
M.S. Mathematics 2016

B.S. Mathematics 2014

## Employment

**Metis**                                                    New York, NY
Data Scientist                                          Jan 2017 to Mar 2017

Metis is a 12 week intensive data science bootcamp covering machine learning, database management and data visualization. Students were tasked with creating four independent projects and one group project. Students scraped, cleaned, and analyzed own data on each independent project. See projects for more details.

**Western Washington University**                      Bellingham, WA
Graduate Teaching Assistant                            Jan 2015 to Jun 2016

- Taught a pre-calculus class of 30-35 students for five quarters; responsibilities included planning and delivering daily lectures
- Collaborated with a team of TAs and instructors to plan and execute lessons
- Held daily office hours to provide individual support and tutoring for students
- Charged with grading tests and quizzes and providing detailed written feedback to students

**New Energy Technologies, Inc.**                          Olympia, WA
Front End Developer                                     Jan 2013 to Jun 2013

- Helped create an updated energy usage monitoring application for JCPenney to be used on mobile devices
- Wrote global components such as the DatePicker, TimePicker, Generic Form, and Generic List
- Tools used include: JavaScript, SQL, jQuery,  and Enyo

Programming Intern                                      Jun 2011 to Sep 2011

- Developed several modules of an energy usage monitoring application for JCPenney
- Wrote global functions, including several functions to format dates and datetimes
- Tools used include: Flex, ActionScript, MXML, and SQL

## Projects

**Minesweeper AI**

- Used computer vision techniques to find and interact with the minesweeper board
- Implemented explicit algorithms to play minesweeper at a high level
- Tools used include: pandas, scikit image, OpenCV, and NumPy, AWS

**Presidential Speeches Throughout History**

- Scraped over 900 presidential speeches from millercenter.org
- Used topic modeling to sort the speeches, then calculated each president's signature topic
- Created an app which prints a given president's most relevant remarks on his signature topic, and uses clustering to find presidents with similar rhetorical styles
- Tools used include: NMF, K-Means clustering, MongoDB, Scrapy, scikit-learn, pandas, AWS, Flask, and gensim summarizer

**Analysis of War Outcomes**

- Used data from The Correlates of War Project to create a model to predict war outcomes
- Looked at factors such as trade between countries, total military spending, total military personnel, and population
- Tools used include: Random Forests, SQL, scikit-learn, pandas, Matplotlib,  and Seaborn.

**Box Office Success: Opening Weekends**

- Scraped data from over 2000 movies from boxofficemojo.com, imdb.com, and numbers.com
- Created a regression model to predict the domestic gross of a movie after opening weekend totals are known
- Tools used include: Scrapy, scikit-learn, Matplotlib, and Seaborn