

# LUKE ARMBRUSTER

## Skills

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Python, NumPy/Pandas/Matplotlib/Seaborn/Scikit-Learn/NLTK/Scipy, SQL, Excel, ArcGIS, Fortran, Tableau, Google Analytics

## Experience

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### Data Science Teaching Assistant General Assembly

Apr 2017 to Current  
San Francisco

Assisting students in the Data Science Immersive program with preparation for technical Data Science interviews as well as with strategy when analyzing a variety of real world datasets for addressing challenging problems.

### Data Science Immersive Student General Assembly

Nov 2016 to Feb 2017  
San Francisco, CA

Three-month, full-time immersive course covering exploratory data analysis, statistical analysis, and machine learning. Tools used include Python, SQL, and Git.

- Used multi-class logistic regression to classify mainstream, fake, conspiracy, and satire Facebook posts by training the model on 9 million engagement counts and 1-2 word grams from 270 thousand posts on 129 news pages. Achieved 16% increase in accuracy above baseline.
- Analyzed data on business and user information on Yelp to build a model to determine whether a business is located in Las Vegas. Achieved model accuracy of ~63% above baseline.
- Cleaned Ames housing data, carefully imputed missing values, identified strong relationships between housing characteristics, applied linear regression with regularization to predict sales price to achieve a ~80% accuracy.

### Traveler World Trip

Feb 2016 to Nov 2016

- Backpacked through China, Taiwan, Japan, Germany, and Italy.
- Visited family in the Midwest.

### Associate II Environmental Science Associates

Apr 2014 to Apr 2016  
San Francisco, CA

Full-time position at an environmental consulting firm in a cross-functional role assisting with a wide range of qualitative and quantitative analyses for clients primarily in San Francisco.

- Using Excel and ArcGIS, cleaned, wrangled, and analyzed a variety of datasets describing hydraulic, hydrologic, and water quality characteristics for environmental impact assessment, engineering modeling, and/or design efforts (see bullet below).
- Provided engineering modeling in HEC-RAS and drafting support in AutoCad for impact assessments of water projects including watershed restoration/improvements and fluvial channel enhancements.
- Created maps in ArcGIS for use in planning, permitting, and design documents.
- Assisted with project management and detailed technical writing of environmental impact reports for clean energy, water utilities, and community development projects primarily in San Francisco. These documents were written for a public audience in accordance with federal, state, and local regulations and guidelines.

### Engineering Aide Humboldt County Department of Public Works

Jun 2013 to Nov 2013  
Eureka, CA

Coordinated and conducted Caltrans laboratory tests of base rock, concrete, and hot mix asphalt used in the repair of roadways throughout Humboldt County.

- Analyzed test results in Excel to ensure that the quality of construction materials met state requirements.
- Traveled extensively throughout Humboldt County to collect field samples and conduct compaction tests.
- Communicated Caltrans test results to supervisor and project engineer.
- Developed a tutorial of a testing method for training future engineering aides.

### Sustainability Intern Humboldt State University Office of Sustainability

Jan 2013 to May 2013  
Arcata, CA

Assisted university officials with efforts to quantify indirect greenhouse gas emissions due to campus activities and provided recommendations to improve existing data resources for future reporting.

- Researched methods of calculating indirect greenhouse gas emissions from university operations and identified improvements needed to update existing estimates.
- Used ArcGIS to evaluate the performance of a tool for estimating greenhouse gas emissions from daily commuting by the campus community and presented recommendations to university officials.

### Climate Change Research Fellow U.S. Department of Energy

Jun 2010 to Aug 2010, Jun 2009 to Aug 2009  
Berkeley, CA

Using the Statistical Programming Language R, worked with researcher Dr. Marc Fischer on projects that assisted him in the effort to verify inventory estimates of greenhouse gas emissions, primarily over Central California, using an inverse modeling technique.

- Corrected a time varying offset in mixing ratio measurements of greenhouse gases from a precision gas system instrument.
- Estimated the error in wind velocity predictions from a weather forecast model and presented research findings to climate change researchers in Knoxville, Tennessee.

## Contact

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## Education

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### General Assembly

Data Science Immersive 2017

Three-month, full-time immersive program with an emphasis on data querying in SQL, and data cleaning, data visualization, statistical analysis, and machine learning in Python.

### Humboldt State University

B.S. Environmental Resources Engineering (ABET accredited) 2013

Program with an emphasis on developing strong skills in programming, applying numerical methods, modeling, performing statistical analyses, economic evaluation of project alternatives, and technical communication. Skills and subject matter expertise of environmental systems are combined to address engineering projects focused on developing water and renewable energy resources.