Yang **Dai**

Data Science · Programming · Engineering
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Skills

Programming	Python, C++, JavaScript
Data Science	Numpy, Pandas, Matplotlib, PySpark, Scikit-Learn, Keras, Tensorflow
Web	Serverless, React, Django, HTML, CSS
Tools	Emacs, Vim, Git, Jupyter Notebook, Shell, Docker, SQL, DynamoDB, LaTex
Languages	English, Chinese, Japanese (intermediate)
Certification	AWS Solution Architect - Associate

Projects

Python Package for Research Data Processing and Analysis

Source Code: www.github.com/superyang713/LabCode

- Wrote a Python Library for preprocessing, modeling, and visualizing data collected from various surface science instruments.
- Created algorithms to calculate surface coverage of Gold Nickel Alloy after literature search.

Full Stack Web App for English Teaching and Learning

Demo: www.yangdaitech.com Source Code: www.github.com/superyang713/ETL

- Inspired by Uber, this webapp is aimed to find matches for students who want to practice English speaking and English native speakers who want to make good use of fragmentary time and earn extra money. The app is built upon serverless technology, ultilizing various AWS services, such as API Gateway, Lambda, DynamoDB, and Cognito, and the Frontend is written is ReactJS.

Experience

Massachusetts Institute of Technology *Cambridge, Massachusetts*

Postdoctoral Fellow *Jun. 2017 - Exp. Jun. 2019*

- Transitioned data analysis method from conventional Excel-like spreadsheet to Python Scripting for improved automation and result reproducibility.
- Increased the accuracy of experimental results by introducing new algorithm and data modeling method to our previous analysis techniques.
- Built a remote pressure monitor web app for lab instruments to increase lab safety and productivity.
- Created a custom jupyter notebook docker image that contains all the necessary packages for lab data analysis. Simplified environment setup for colleagues who are new to python.

University of Utah *Salt Lake City, Utah*

Research Assistant *Aug. 2011 - May. 2017*

- Designed, fabricated and maintained a sophisticated surface science apparatus from the ground up, as a result of a collaboration with 7 other research institutes.
- Created multiple data analysis templates for processing and analyzing large datasets generated from the custom instrument.
- Wrote LabView programs for data acquisition and system control.
- Preliminary results disagreed with those documented by our collaborator. As a result, designed and conducted additional experiments, and upon data interpretation and literature search, discovered nanoparticle size effect.

Education

University of Utah *Salt Lake City, Utah*

Ph.D. in Physical Chemistry *Jun. 2011 - May. 2017*

- Thesis: Electronic Characterization Of Size-Selected Platinum Clusters and Modification Through Atomic Layer Deposition.