Yang **Dai**

Data Science · Programming · Engineering

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Skills

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

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 Development

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

- Identified a potentially profitable niche in the education market and decided to make a web app for English teaching and learning.
- With limited budget, adopted serverless technology as the most suitable method for app deployment.
- Ultilized various AWS services, such as API Gateway, Lambda, DynamoDB, and Cognito.
- Self-learned ReactJS framework and various Javascript modules for front-end development.

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.