Yang **Dai**

Data Science · Programming · Engineering

247 Presidents Lane, Quincy, Massachusetts, 02169, US

(+1) 510-363-6334 | daiy@mit.edu | www.yangdai.info | superyang713 | yangdai713

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

- Studied interaction between molecular hydrogen and modified Nickel/Gold surface alloy with numeric and analytical tools.
- Explained and matched experimental observations to theoretical models using fitted statistical simulations and analytic solutions.
- Transitioned data analysis method from conventional Excel-like spreadsheet to Python Scripting for improved automation and result reproducibility.
- Presented research results to general as well as expert audiences through seminars, conferences, talks, and posters.
- Daily use of Linux Shell and Python scripts to automate tasks.
- Created a custom docker image that contains all the necessary packages for lab data analysis.
- Built a remote pressure monitor web app for lab instruments to increase lab safety and productivity.

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.