

Sophie Chen

📧 Sophie-Chen-Data 🌐 SophieGarden

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Skills

Programming: Python, SQL, Tableau, Git, Bash, PyTorch, Keras, Scikit-learn, SciPy, MapReduce, Jupyter, Pandas, Numpy, Matplotlib, Matlab, \LaTeX , (Basic: Java, Flask, HTML, CSS)

Machine Learning: Supervised Learning, Deep Learning, Image Classification, Unsupervised Learning, Evaluation and Diagnostics

Statistics: Hypothesis Tests, A/B testing, Propensity Models, Time Series Analysis

Experience

Data Scientist Fellow

Insight Data Science, 2018

- Developed a Chrome Extension using **customized hierarchical classification** algorithm with natural language processing (**NLP**) to predict best folder for downloading files
- Achieved 82% predictions on the right path, 69% within 1 level away
- Deployed with Python, Flask, Chrome API, PyInstaller

Optical Modeling Research Assistant

University of Illinois, Fudan, 2010-2018

- Build **predictive** thermal model with **3D visualization**, improved fiber laser power by 10%+, and broadband fiber source power to **the highest to date** (Matlab)
- Verified three-body formation theory for the first time via **automated data collection**
- Analyzed **transformed** spectra and **time series data** with computational models, reduced RMSE of molecular potential curves by 20%+, discovered 11+ new electronic transitions
- Developed **playbook-style documentation** for managing various lab tasks

Consultant for Renter Evictions

Consulting, 2018

- Analyzed racial bias in renter evictions with **propensity modeling**, reported with **interactive visualization** (Tableau)
- Achieved 0.7 RMSE on predictions of eviction rates, required extensive **cleaning and engineering** of high-dimensional data (XGBoost, Cross Validation)

Projects

Customer Identification for Mail-Order Sales Company

- Identified core customers by **interpreting the differences between the clusters** for the general population and that of customers (PCA, K-Means)
- Built **pipeline** that includes data cleaning, feature engineering, modeling, clustering

Flower Species Image Classifier

- Designed a **neural network** image classifier with **PyTorch** (ResNet, VGG)
- Built a Command Line App to automate extract, load, transform (**ETL**), learning, and inference

Education

PhD, Electrical and Computer Engineering *University of Illinois Urbana-Champaign, 2018*

Nano Degree, Data Science

Udacity, 2018

MS, BS, Optical Engineering

Fudan University, 2013