

San (Samantha) Wang

GitHub blog: <https://san-wang.github.io/> • LinkedIn: [linkedin.com/in/san-wang](https://www.linkedin.com/in/san-wang)

EDUCATION

The George Washington University (GWU)

DC, 01/2016-12/2017

M.S. in Data Science, GPA: 3.9/4.0

- Featured Classes: Data Analysis, Data Mining, Data Warehousing, Machine Learning I&II, Visualization of Complex Data

Sichuan University

Chengdu, China, 09/2011-06/2015

B.S. in Mathematics, concentration in Statistics, GPA: 3.2/4.0

- Outstanding Undergraduate Thesis (5%); Second Class Scholarship in 2014

SKILLS

- Software: Python (Tensorflow, keras, scikit-learn, Caffe, EDA), Spark, [Tableau](#), postgresql, MySQL, R, Cloud Platform, Git, Linux
- Technique: ETL, Computer Vision, NLP, Recommendation System, Machine Learning Modeling, Data Mining, Data Visualization

WORK EXPERIENCE

Machine Learning Research Associate

MA, 01/2019-06/2019(grant ends)

Harvard Medical School (HMS)

- Main contributor for developing image forensics tools using Python to detect improper reuse of medical images
- Build end-to-end machine learning model using Siamese neural network and develop novel neuron network structures
- Corporate with principal investigators to improve metadata collecting and storage structure design

NLP Research Assistant ([Blog](#))

DC, 05/2017-12/2017

The George Washington University (GWU)

- Led 4 graduate students to analyze top technical skills demand, market demand and supply of data scientists across the U.S.
- Collected supporting data by scraping; applied stemming, synonym dictionary, stop-words removing and TF-IDF technique to optimize NLP approaches, analyzing technical skill requirement and opening availability for data-related positions
- Built interactive Tableau reports, such as heatmap, Sankey chart, word-cloud, geographic map, presenting findings efficiently and in a non-technical audience-friendly way, receiving 1.7k views
- GWU data science technical blog and DC DataCon 2017 conference reported our team's research to demonstrate the insight of data science industry and the gap between academic curriculum design and industry requirement

PROJECTS

Movie Recommendation System [Python/Spark/Flask] ([Demo](#))

MA, 03/2018-current

- Built ETL pipeline to conduct online analytical processing (OLAP) with Spark SQL to analyze user and item profile
- Created customized content-based NLP model to provide recommendation based on movie plot and cast preference
- Conducted Collaborative Filtering(CF) models for personalized recommendation using ALS matrix factorization in Spark MLlib, similarity-based CF model; provided user-based CF model to handle item cold start
- Designed and developed a Flask web API backed with Postgres database to provide users with customized movie recommendations and movie exploration by genre and ratings

Avito Product Demand Analysis [Python]

MA, 05/2018-06/2018

- Predicted product demand for an online ads platform by analyzing users' behavior pattern and products' information
- Transformed raw text to bag of words representations using TF-IDF; extracted image features from pre-trained VGG16 model
- Trained various supervised learning models, such as Random Forest, lightGBM, logistic regression, and applied regularization and dropout technique to overcome overfitting, improving RMSE score by 6% in test dataset
- Evaluated model performance using k-fold cross-validation and identified most important factors that affect product demand

Master Capstone, Image Classification [Tensorflow/Caffe/Keras] ([Blog](#))

DC, 02/2017-12/2017

- Classified 39K traffic sign images in 43 categories using convolutional neural network(CNN) in Keras, Tensorflow and Caffe
- Visualized kernels, feature maps by building customized plots to show their changes during training using Tensorboard
- Reduced training time by 87% using transfer learning and GPU in Google cloud platform
- Gained 90.58% accuracy when testing on 12K images in Caffe and 95.42% in Tensorflow and Keras