SELENA (XIN) FENG

San Francisco | 480-878-8997 | applexin.feng@gmail.com | in/selena-xin-feng-b0894980 | https://github.com/xf37

WORKING EXPERIENCE

Insight Data Science - Data Scientist Fellow, San Francisco, CA Jun. 2019 – Present

- Lead an end-to-end machine learning project for Snappr, a startup company offering an on-demand professional photography booking service.
- Generalized Facebook's Prophet, linear regression, and catboost regression models with additional feature engineering to predict peak marketplace demand based on Snappr's historical data (millions of events) from August 1st, 2016 to the present.
- Automated the pipeline of spatiotemporal forecasting and visualization of supply shortage using PostgreSQL and Python.
- Presented the work to CEO, CTO, and other technical/non-technical audience.

Oak Ridge National Laboratory - Data Science Intern, Oak Ridge, TN Jun. 2018 – Sept. 2018

- Formalized optimization models to study supply-demand matching in world trade.
- Collected and pre-processed global import/export trade volume for 190+ countries between 1995 and 2017 from MIT OEC (Observatory of Economic Complexity) open data source.
- Implemented regression models using R to analyze the relationship between global tariff and US import/export trade value.

PROJECTS

Drone Delivery Optimization Sept. 2014 – Jun. 2019

- Developed a location-allocation model with the consideration of spatiotemporal heterogeneity in distributed demand and varying service response costs.
- Applied the proposed models to emergency response: locating medical drone base stations and allocating service in order to optimize overall response (in Southern California), which reduced the average waiting time for patients with cardiac arrests by more than 10%.
- Implemented integer programming for drone route optimization using Python and Matlab.

Route Optimization and Meetup Points Finding Mar. 2016 - Jun. 2019

- Built a context-based geoprocessing framework on more than 40K local businesses in the Phoenix metropolitan area using Yelp social media geospatial datasets.
- Implemented heuristic shortest path algorithm on more than 220K road segments to find optimal spatiotemporal meetup location on road networks for multiple moving objects.

Kaggle Competition: NYC Taxi Fare Prediction Sept. 2018

Hosted by Google and Coursera

- Predicted NYC taxi fare by adopting XGBoost with geographical feature engineering, taxi route estimation, and model ensembling (KNN, Catboost, etc) on more than 30 millions NYC taxi fare records.
- Won top 9th place (1%) out of 1488 teams.

SKILLS

Machine Learning: unsupervised learning (K-means, Voronoi diagram, PCA, etc.) and supervised learning (logistic regression, random forest, neural networks, gradient boosting tree, etc.).
Programming: Python (Pandas, Scikit-learn, XGBoost, Fbprophet, Arcpy, Gurobipy, Shapely, Matplotlib, etc.), SQL (PostgreSQL), R, Matlab, C, Gurobi, Xpress.
GIS & RS: data management, network analysis, spatial analysis and statistics, visualization (ArcGIS, ENVI).
Optimization: linear and integer programming, location modeling, simplex method, etc.

EDUCATION

Ph.D. in Geography (Spatial Data Science**)** 2019
University of California, Santa Barbara GPA: 4.00/4.00
M.A. in Geographical Sciences and Urban Planning, Arizona State University 2015, GPA: 4.00/4.00
M.S. in Geographical Inofrmation Science and Remote Sensing, Peking University, China 2013, GPA: 3.83/4.00

Graduate Level Coursework Highlights:

- **Statistics and Modeling**: Geographic Information Analysis, Topics in Spatial Regression, Spatial Environment Modeling, Digital Analysis Remote Data, Advanced Digital Analysis.
- **Machine Learning**: Foundation of Data Science, Data Structures/Algorithms, Geocomputation.
- **Operation Research/Spatial Optimization**: Foundation of Operation Research, Applied Deterministic Operation Research, Location Analysis and Modeling, Advanced Location & Transportation System.

SELECTED HONORS AND AWARDS

- Excellence in Research Award, Department of Geography, University of California, Santa Barbara, 2019.
- 2nd Place, Student Paper Competition, Geographic Information Science and Systems Specialty Group (GISS-SG), American Association of Geographers Annual Meeting, Washington, DC, April 3-7, 2019.
- Finalist (2nd Place), Tiebout Prize, Best Graduate Student Paper Award Western Regional Science Association 57th Annual Meeting, USA, February 11-14, 2018.
- Dangermond Travel Grant, Department of Geography, University of California, Santa Barbara, 2016-2018.
- Lounsbury Student Travel Fellowship, Arizona State University, 2014.
- Wusi Individual Scholarship, Peking University, China, 2013.
- 2nd Place, Best Student Paper Award IEEE International Conference on Spatial Data Mining and Geographical Knowledge Services, Fuzhou, China, July 6-8, 2011.

SELECTED SPATIAL DATA SCIENCE PUBLICATIONS - 150 CITATIONS BY SEPT 2019

- Wang, S., Gao, S., **Feng, X.**, Murray, A., and Zeng, Y. A context-based geoprocessing framework to find optimal spatiotemporal meetup location on road networks for multiple moving objects, International Journal of Geographical Information Science, 32(7), 1368-1390, (2018).
- **Feng, X.**, Murray, A.: Allocation using a heterogeneous space Voronoi diagram, Journal of Geographical Systems, 20(3), 207-226, (2018).
- Murray, A., **Feng, X.**, Shokoufandeh, A. Heterogeneous Skeleton for Summarizing Continuously Distributed Demand in a Region. In Proceedings of 10th International Conference on Geographic Information Science, vol. 114, (2018).
- **Feng, X.**, Murray, A. Spatial Analytics for Enhancing Street Light Coverage of Public Spaces, LEUKOS, 14(1): 13-23, (2018).
- Murray, A., **Feng, X.** Public Street Lighting Service Standard Assessment and Achievement, Socio-Economic Planning Sciences 53: 14-22., (2016).
- **Feng, X.**, Myint, S. Exploring the Effect of Neighboring Land Cover Pattern on Land Surface Temperature of Central Building Objects, Building and Environment, 95: 346-354, (2016).
- Song, J., Du, S., **Feng, X.** and Guo, L.: The Relationships between Landscape Compositions and Land Surface Temperature: Quantifying Their Resolution Sensitivity with Spatial Regression Models, Landscape and Urban Planning 123: 145-157, (2014).
- **Feng, X.**, Du, S., Zhang, F., and Wang, S.: Urban Land Classification of High Resolution Images Based on Multi-scale Fusion, Journal of Geography and Geo-Information Science 29(3): 43-47, (2013).