Kungang Zhang

Seeking Data Science Internship
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EDUCATION

NORTHWESTERN UNIVERSITY

Ph.D. Candidate in Industrial Engineering & Management Sciences
Expected Sep 2019 | Evanston, IL

M.S. in Industrial Engineering & Management Sciences
Sep 2016 | Evanston, IL
Cum. GPA: 3.81
Conc. in Statistics & Optimization

DUKE UNIVERSITY

M.S. in Mechanical Engineering
Dec 2014 | Durham, NC

PEKING UNIVERSITY

B.S. in Applied Mechanics
Jul 2012 | Beijing, China

LINKS

Github:// **kungangzhang**
LinkedIn:// **kungangzhang**
Website:// **kungangzhang**

COURSEWORK

GRADUATE

Machine Learning
Convex Optimization
Predictive Analytics
Statistical Pattern Recognition
Bayesian Statistics
Times Series Methoes

MOOC

Full Stack Software Engineering
Full Stack Data Analysis
Data Structures and Algorithms
Introduction to Databases

SKILLS

PROGRAMMING

Programming language:
R • Python • Java • C++/C • JavaScript • HTML • Matlab • Mathematica • Gurobi
Full Stack:
Node.js • Nginx • AngularJS • Bootstrap • D3.js • LeafletJS • dat.GUI • Docker
Database:
MySQL • Postgres SQL• MongoDB • Redis • Cassandra

PROJECT EXPERIENCE

DATA ANALYSIS AND VISUALIZATION OF HOUSE PRICES

- Designed a web-crawler to collect data based on Node.js and express
- Built a MongoDB database and a Postgres SQL database connecting the web-crawler
- Cleaned and sorted the raw online data with missing value and multicollinearity by regression, dimension reduction, and sequential model selection using Postgres SQL and R
- Predicted housing prices with supervised and unsupervised machine learning methods
- Built an interactive webpage to visualize the position of communities based on price range on an interactive map using LeafletJS and dat.GUI

VISUALIZATION AND STATISTICAL ANALYSIS FOR VAPOR CONDENSATION

- Simulated a stochastic process of vapor condensation based model of Possion point process (Matérn type repulsive process)
- Animated the entire physical process of condensation
- Analyzed the distribution of condensation process based on contemporary spatial statistics in R

FULL STACK SOFTWARE ENGINEERING PROJECT: TINYURL

- Designed a web application to manage requests to short urls based on Node.js and express module
- Designed a RESTful API for requests and configured a MongoDB database to store short and long urls
- Implemented load balancing on a distributed system using Nginx
- Deployed Cassandra databases to public clusters using Docker
- Conducted A/B test using Mocha and Apache Bench
- Developed a feature of expiration of short urls

RESEARCH

DIMENSION REDUCTION USING INVERSE KPCA | Funded Graduate Research

This project is to developed an algorithm, called inverse KPCA (kernel PCA), for dimension reduction of high-dimensional data (i.e. images), feature extraction and variation source estimation. This algorithm is a generative method which has better interpretation than KPCA. Besides, this method is supposed to improve the performance of that dimension-reduction method.

AWARDS

2016	Northwestern	Walter P. Murphy Fellowship
2016	Northwestern	Benjamin K. Sachs Graduate Fellowship ($ 7000)
2015	Duke Univ	Sam Y. Feng & Rose S. Feng Fellowship ($ 5000)
2013	Duke Univ	MEMS Research Supplement ($ 5000)
2012	Duke Univ	The 1st Year MEMS Fellowship
2012	Peking Univ	President Fund for Undergraduate Research Training