

JASON (ZHIHANG) DONG

Ph.D. Student & Seeking Data/Applied/Research/ML Scientist Internship

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EXPERIENCE

Swiss MDC Cell Data Records Project

Collaborated Project with Dr. Adrian Dobra and Dr. Yen-Chi Chen

March 2017 – Ongoing Seattle, WA

- Managed and warehoused 100G+ flow of data through cloud computing services and built new big data database;
- Wrangled, Cleaned and Engineered the data to overcome its unstructured, noisy and space-time properties
- Wrote 1000+ LOC to implement statistical and machine learning (kernel, tensor and other) methods
- Modeled routine activity space and human mobility and social interactions with consultations on current literature

Summer RA on Spatial Methodology

Center for Studies in Demography and Ecology

May 2017 - Sep 2017 Seattle, WA

- Provided 400+ hours of statistical/programming supports to five different mini-projects; Managed data from multiple clients
- Implemented OD Matrix Mapping in GIS; Wrote Python programs to identify fake patient ID in the system with < 0.1% error rate
- Wrote 800+ LOC; Worked with leaflet.js on interactive mapping

Undergraduate Summer Data Analyst

Survey Research Center affiliated to Penn State SSRI

May 2015 - August 2015 University Park, PA

- Missing Data Info Retrieval for 100,000+ survey responses
- Implemented algorithms to detect false survey responses

Teaching Assistant and Research Assistant

Penn State & University of Washington

May 2015 - Ongoing Multiple Cities

- Assisted and co-taught undergraduate-level methodological and substantive courses; Shared responsibilities for lectures, exams, assignments; Best Rating: 4.4/5.0, 15 Summer; Refs Available
- Helped design experiments in Media Effects Lab at PSU; Conducted literature review and data analyses in multiple disciplines

MACHINE LEARNING & SOFTWARES

Machine Learning: Spark Hadoop Hive MapReduce Tika
PyTorch Tensorflow NTLK AWS theano H2O Keras
Softwares: ArcGIS LaTeX Excel GeoDa tableau SAS
GeoDa d3 Databases: mySQL noSQL Cassandra Pig

EDUCATION

Ph.D., Area: Social Statistics

University of Washington, Seattle

July 2016 – June 2020 (Expected)

Advisor: Adrian Dobra, Ross Matsueda

B.A. Sociology + 4**

Penn State University, University Park

August 2012 – May 2016

**with concurrent majors/minors in Statistics, Geography, Psychology and Media Effects

RESEARCH AREA

Machine Learning

Online & Adaptive Learning Models

Statistical Methodology

Spatial Models, Time-Series, Graphical Models, Demographic Techniques

Social Sensing

Neighborhood Effects, Experimental Design, Social Network

Natural Language Processing

Deep Learning/Neural Network Models, Semantic Analysis

COMPUTER LANGUAGES

R, Python, SQL
Java, Scala
C(Stats Lib), JavaScript



COURSES

Machine Learning for Big Data
CSE 547, Sp 16, UW

Online and Adaptive Learning
CSE 599, Wi 18, UW

Bayesian Statistics
STAT 564, Sp 17, UW

Optimization
MATH 515, Au 17, UW

PROJECTS

False Survey Data Detection

Individual Project

📅 December 2016 – Ongoing 📍 Seattle, WA

- An NLP-Deep-Learning toolkit to detect false/inconsistent entries on survey responses using deep belief network (DBN)
- Error rate lowered by 16% compared to the benchmark model

Neighborhood Sensing Project

Individual Project

📅 December 2016 – Ongoing 📍 Seattle, WA

- Scraped and Streamed data into ML models from City Gov APIs
- Created Integrative R applications generate dynamic statistical models to measure network effects on neighborhood safety

Statistics, Computational and Sociological Working Groups

Participant

📅 August 2016 – Ongoing 📍 Seattle, WA

Regularly participated, served as discussants or presented in research working groups include:

- Applied, Bayesian and Computational Statistics WG (Prof. Adrian Raftery)
- Computational Demography Working Group (Prof. Emilio Zagheni)
- Desistance Working Group (Prof. Ross Matsueda)
- Context Working Group (Prof. Kyle Crowder)

PUBLICATIONS

📄 Journal Articles

- Adrian Dobra, Zhihang Dong (joint work with Yen-Chi Chen). "Projecting the Short-term Population Mobility using Cell Data Records". In: *In Progress*.
- Dong, Zhihang. "Age Homogamy And Marital Happiness Over The Life Course: What is There To Explain?" In: *Under Review by JMF*.
- Zhihang Dong, Callie Burt (joint work with Ronald Simons). "Criminogenic Hangout Selection: Examining the Discrepancy between Neighborhood and Individual Criminal Propensity". In: *In Progress*.

👥 Conference

- Dong, Zhihang (2017). "Estimation and Extrapolation of Spatial Trends in Mortality Data using Bayesian APC Modeling". In: *ICPG, International Conference on Population Geography*.
- – (2016a). "Structural Covariates of Crime in Texas Counties using Spatial Effects". In: *PAA, Population Association of America Annual Meeting*.
- – (2016b). "Theorizing Urban Neighborhoods: Mapping the Interneighborhood and Intranighborhood Networks and Criminogenic Factors on Street Crime Victimization". In: *ASC*.

HONORS

Clarence and Elissa M. Schrag Endowed Fellowship

University of Washington

📅 2016-17 📍 Seattle, WA

Selectivity: *Only 2 per Ph.D. Cohort*

UW HCC Cloud Computing Credits Awards for Research

University of Washington

📅 October, 2017 📍 Seattle, WA

Selectivity: *Unknown*

Undergraduate Research Travel Awards + Dean's List

Pennsylvania State University

📅 Multiple 📍 University Park

Selectivity: *Travel Awards: Unknown, Dean's List: High GPA*

HUMAN LANGUAGES

English

Chinese

Japanese



MORE COURSES

Statistical Learning

STAT 535, Au 16, UW

Databases

CSE 544, Wi 18, UW

Statistical Demography

STAT 593D, Sp 17, UW

Advanced Regression Methods for Independent Data

STAT 570, Au 17, UW

Spatial Statistics

STAT 591A, Au 17, UW

Big Data and Population Processes

SOC 538, Au 16, UW