YIJUN LIN

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CURRICULUM VITAE

EDUCATION

Ph.D. Computer Science - Aug. 2018 -
University of Southern California

M.S. Data Informatics GPA: 3.955/4.0 Aug. 2015 - May 2017
University of Southern California

B.S. Information Securities (CS) GPA: 87.17/100 Sep. 2011 - Jun. 2015
Tongji University (Shanghai, China)

WORKING EXPERIENCES

Research Staff Nov. 2017 - Jul. 2018
Spatial Sciences Institute (SSI), University of Southern California

- Led research groups, including hosting weekly meetings and coordinating development tasks
- Developed web service for querying predicted $PM_{2.5}$ concentrations incorporated air quality model

Technical Staff Sep. 2017 - Jul. 2018
Integrated Media System Center (IMSC), University of Southern California

- Collaborated with students and researchers at Integrated Media System Center (IMSC) in USC
- Managed dashboard development for bus delay analysis and prediction

Data Scientist (*Research*) Jun. 2017 - Oct. 2017
Spatial Sciences Institute (SSI), University of Southern California

- See the project "Modeling Intra-City $PM_{2.5}$ Concentrations at a Fine Spatial Resolution"

Teaching Assistant Sep. 2016 - May 2017
USC Graduate Level Course INF553 "Foundations and Applications of Data Mining"

- Responsible for helping students and grading quizzes and assignments
- Designed and held Recommendation System Competition for the course

Software Engineering Intern Jul. 2014 - Sep. 2014
Global Business Service (GBS)/AI Department of IBM (China, Shanghai) Company Ltd.

- Maintained and Tested POS system and CRM system
- Developed backend of Customer Consulting and Complaint System (JAVA)

PUBLICATOION

Lin, Y; Pan, F; Chiang, Y.; Stripelis, D; Ambite, J L; Eckel, S P; and Habre, R. **Mining Public Datasets for Modeling Intra-City PM2.5 Concentrations at a Fine Spatial Resolution.** In 25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Redondo Beach, CA, USA, November 2017. Aug. 2017

HONORS & AWARDS

- Expediation Hackathon in Los Angeles, *Runner-up winner* Mar. 2017
  - Developed a geo-visualization system based on Mapbox, which allows users to identify the best farming places automatically based on open-source datasets including weather and geographic information

- USC Viterbi Graduate Mentorship Program Certification — Dec. 2016
- Tongji University "Outstanding Graduate" — Apr. 2015
- The 8th Tongji University Undergraduate Innovation Programs, *Third Class* — Nov. 2014
- Tongji University "Outstanding Students" — Nov. 2014
- Tongji University Scholarship, *2nd Class (Top 15%)* — Oct. 2014
- Tongji University "Social Activities Scholarship" Prize — Oct. 2014
- Tongji University Scholarship, *3rd Class (Top 25%)* — Oct. 2013
- Summer Social Activity, "Outstanding Organization Award" — Oct. 2012

PROFESSIONAL SERVICE

Presenter

- Guest Lecturer "Map-Reduce" and "Introduction to Spark and Scala" — Jun. 2018
  USC INF553 Foundations and Applications of Data Mining
- "Mining Public Datasets for Modeling Intra-City $PM_{2.5}$ Concentrations at a Fine Spatial Resolution" — Nov. 2017
  25th ACM SIGSPATIAL International Conference on Advances in Geographic Information
- Poster Presenter "Linking Historical Maps to the USC Shoah Foundation Visual History Archive" — Jul. 2017
  28th International Cartographic Conference, Washington, DC, USA

Sub-reviewer

- ACM SIGSPATIAL 2018, *International Conference on Advances in Geographic Information Systems* — Jul. 2018
- ICTAI 2018, *30th IEEE International Conference on Tools with Artificial Intelligence* — Jul. 2018
- ACM SIGSPATIAL 2017, *International Conference on Advances in Geographic Information Systems* — Sep. 2017
- GeoAI 2017, *the First Workshop on AI and Deep Learning for Geographic Knowledge Discovery* — Aug. 2017
- ICTAI 2017, *29th IEEE International Conference on Tools with Artificial Intelligence* — Jul. 2017

PROJECT EXPERIENCES

Exploiting Spatiotemporal Patterns for Accurate Air Quality Forecasting using Deep Learning — May - Jul. 2018
Spatiotemporal patterns detection, Deep Learning, Tensor Flow, Python

- Integrated a deep learning model (DCRNN) and geo-context to represent the similarity between neighborhoods with regards to air quality and to capture the spatial and temporal dependency of air quality data for forecasting
- Built an air quality model to forecast $PM_{2.5}$ concentrations for next 24 hours

Modeling Intra-City $PM_{2.5}$ Concentrations at a Fine Spatial Resolution — Apr. 2017 - Present
Spatial event detection, Scala, Spark, SparkMLlib, Postgres, PostGIS, Hue

- Integrated *OpenStreetMap* and other spatial data sources into data analytic framework
- Built an *expert-free model* for predicting $PM_{2.5}$ concentrations in a fine spatial resolution

Metrans: Bus Delay Prediction — Oct. 2017 - Jul. 2018
GPS Trajectory Analysis, Java, Postgres, PostGIS

- Incorporated *LA Bus GPS data* and *LA GTFS data* to detect bus delay on bus stops
- Built a dashboard to show the average delay time of each bus stop

Unlocking Maps: Text Recognition in Historical Map — Oct. 2017 - Jul. 2018
Text Recognition, Strabo, OpenCV, C#, SVM, Grab-cut

- Utilized *Strabo (a map-processing software)* for the automatic extraction of text labels from historical maps
- Evaluated *Strabo* with 15 maps to explore ways for improving the accuracy

Movie Recommendation System Competition Feb. - May 2017

Recommender System, Scala, Spark, Spark MLlib, Collaborating Filtering (CF)

- Built a *Hybrid Recommender System* to predict movie ratings
- Achieved *RMSE* = 0.90 on the MovieLen dataset (20M records), comparing to a Model-based CF with *RMSE* = 1.22

Prediction on Anemia Status and Blood Transfusion Volume Feb. - Mar. 2017

Health Care, Python, Regression, Lean Six Sigma, Data Visualization

- Built a *regression model* to address missing anemia status problem
- Implemented a *Recommendation System* for predicting the volume of transfusion blood units, with *RMSE* = 1.3

Mining Periodic Pattern in People's Trajectory Jan. - Apr. 2015

GPS Trajectory Pattern Recognitions, Python, Data Mining

- Clustered stationary points of users using *StayPoint* and *OPTICS Algorithm* for identifying potential locations
- Successfully mined non-strict (with a threshold) periodic patterns in people’s trajectory data with multiple periods (e.g., weekly, biweekly, and monthly) using a modified *FP-Growth algorithm*
- Predicted people's schedule and recommended nearby locations