XIAOTONG SUN

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EDUCATION

Renmin University of China Beijing, China
Master of Engineering in Management Science and Engineering 2017 - 2020

- GPA: 3.9/4.0
- Relevant Coursework: IT/IS Frontiers, Modern Statistic Methods, Game Theory and Information Economics

Central University of Finance and Economics Beijing, China
Bachelor of Management in Electronic Commerce 2013 - 2017

- GPA: 80.8/100
- Relevant Coursework: Java Programming Design, Software Developing Tools, Econometrics
- Academic Awards: Aesthetic Attainment Scholarships | Meritorious winner, MCM/ICM (mathematical contest in modeling /interdisciplinary contest in modeling)

RESEARCH EXPERIENCE

Implementation of an Automatic Tool for a Database China
Director; Advisor: Dr. Hongxun Jiang Dec. 2018 – Present

- The database automation tool is expected to regularly collect pollutant emission data, air quality data, meteorological data, etc. from the website of the Environmental Protection Bureau and other cooperative sources.
- Under the guidance of my advisor, my team realized the timing data transmission between the websites and the database through Python programs and Linux commands.
- The automatic tool has been running normally for more than 10 months since February 2019, and has collected more than 1GB of environmental data automatically.

Research on Prevention and Control Technology for Air Pollution in an Urban Group China
Research Assistant; Advisors: Dr. Hongxun Jiang and Dr. Wei Xu Jan. 2018 – Present

- I used machine learning methods, including deep learning methods (Recurrent Neural Network, Long Short-Term Memory, Convolutional Neural Network), were used to preliminarily analyze and predict air quality based on historical air quality data, meteorological data and pollution emission data.
- A novel prediction framework combining multi-task learning with deep learning was proposed to characterize the complex interactions between airborne pollutants for simultaneous forecasts of multiple pollutants concentrations.
- I utilized large real-world datasets containing 451,509 records from 2013 to 2017 to validate the effectiveness of the proposed approach.

Research on Fraud Detection in Electronic Banking China
Research Assistant; Advisor: Dr. Wei Xu Jul. 2017 – Dec. 2017

- Based on the session data of electronic banking (such as user current login device, login city, login times within 24 hours, etc.), we constructed time-series user behavior features to detect fraudulent transactions.
- Deep learning and sequence learning were combined to detect the anomaly behaviors of users based on characterizing the difference between the user's recent behaviors and the user's historical behaviors and the difference between the user’s behaviors and other users’ behaviors conducting same banking operations.
- Considering the high efficiency requirement of online fraud transaction detection, we deployed the detection algorithm on Spark, a distributed parallel computing framework, and used the data of electronic bank in China Everbright Bank for testing.

Research on Building Material Price Prediction China
Research Assistant; Advisor: Dr. Hu Yang Jan. 2017 – Apr. 2017

- Analyzed the advantages and disadvantages of time series algorithms (Moving Average, Exponential Smoothing, and their variants) applicable to building material price forecasting.
- Implemented selected statistical models with R programming language and built the APIs allowing further prediction and analysis.

PUBLICATIONS

- **Xiaotong Sun** and Qili Wang, "An Internet of Things Solution for Intelligence Security Management", ***International Conference on Information Systems (ICIS)***, Munich, Germany, December 2019.
- **Xiaotong Sun** and Wei Xu, "Deep Random Subspace Learning: A Spatio-temporal Modelling Approach for Air Quality Prediction", ***Atmosphere*** (2019), 10, 560.
- **Xiaotong Sun**, Qili Wang, Wei Xu, and Yu Qin, "Smuggling Activity Detection in Smart Cities: A Perspective from Internet of Things", ***China Summer Workshop on Information Management (CSWIM)***, Shenzhen, China, June 2019.
- **Xiaotong Sun**, Wei Xu, and Hongxun Jiang, "Spatial-temporal prediction of air quality based on recurrent neural networks", ***Hawaii International Conference on System Sciences (HICSS)***, Grand Wailea, Maui, Hawaii, USA, January 2019.

WORKING PAPERS

- "Enhancing the Early Detection of Criminal Activities: An Internet of Things Enabled Paradigm", Prepared for submission, targeted for ***Information Systems Research*** (with Liangfei Qiu, Qili Wang and Wei Xu).
- "A Deep Multitask Learning Approach for Air Quality Prediction", Under Revision for 2rd round Review at ***Annuals of Operations Research*** (with Wei Xu, Hongxun Jiang and Qili Wang).
- "Clickbait Detection based on Entity Extraction Features", Work-in-Progress (with Wenping Zhang and Wei Xu).
- "Early Detection of Money Laundering Activities: A Transaction Network-based Method", Work-in-Progress (with Qili Wang and Wei Xu).

PROFESSIONAL EXPERIENCE

Reviewer

- International Conference on Information Systems (ICIS)
- Workshop on Information Technologies and Systems (WITS)
- Pacific Asia Conference on Information Systems (PACIS)

COMPETENCIES AND SKILLS

Operating Systems:

- Linux, Mac OS, Windows

Programming Languages:

- Python, Java, Scala, MATLAB, R, STATA, HTML

Database Management Systems:

- MySQL, Oracle Database, MongoDB, Redis

Language

- English [TOEFL 103]
- Mandarin Native Speaker