Huiqun Huang

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QUALIFICATIONS

- ➢ 3+ years experiences in Python/Java/MATLAB.
- ➢ 2 years' experience in TensorFlow.
- ➢ 2 years' experience in SQL.
- ➢ 3+ years' experience in Data Mining/Spatial-Temporal Prediction.
- ➢ 2+ years' experience in weekly data visualization and presentation.
- ➢ Built 3 Java based android Apps.

EDUCATION

Ph.D. Student, Dept. of Computer Science and Engineering, Univ. of Connecticut, Storrs, CT   Expected 12/ 2024

B. Eng., Dept. of Software Engineering, Beijing Jiaotong University (BJTU), Beijing, China   06/2019

PROFESSIONAL SKILLS

Programming Language: Python; Matlab; Java; SQL; Html; CSS; JavaScript; Android Application Building; Website Developing; Linux Command Line

Areas: Data Mining; Machine Learning; Urban Computing; Spatio-Temporal Prediction; Time Series Prediction

Libraries and Frameworks: TensorFlow; Keras; Jupyter Notebooks; Scikit-learn; Pandas; Github

PROJECT EXPERIENCE

Citywide Urban Anomaly Events and Crowd Flows Prediction   01/2020-Present
University of Connecticut, Storrs, CT, PhD Research

- ➢ Proposed the Deep Learning-based prediction models to address the problems of forecasting the spatial distributions and temporal trends of the urban anomaly events and crowd flows.
- ➢ Captured the hourly, daily, and weekly patterns of both the anomaly events and crowd flows in citywide scale to solve the prediction problems in temporal dimension.
- ➢ Extracted the regional distribution patterns of both the anomaly events and crowd flows for multi-region anomaly events and crowd flows predictions.
- ➢ Captured the spatial-temporal correlation between the occurrences of anomaly events and the movements of crowd flows to improve the predictions.
- ➢ Analyzed and differentiated the varying impacts of the historical anomaly events/crowd flows in different time steps on their predictions and explained the quantified impacts by the attention scores.
- ➢ Analyzed and differentiated the varying impacts of the historical anomaly events/crowd flows from other regions on their predictions in the specific region and explained the quantified impacts by the attention scores.
- ➢ Analyzed and differentiated the varying impacts of the external factors, *i.e.*, weather, urban events, weekday/weekend, and holiday, on the future occurrences of anomaly events and the movements of crowd flows.
- ➢ Implemented the proposed frameworks by the TensorFlow package in Python, and depicted the results based on MATLAB and Python.

Discovering Medication Patterns for High-complexity Drug-using Diseases through Electronic Medical Records (EMR) 04/2017-04/2018

Beijing Jiaotong University, Beijing, China, Part-time Undergraduate Research

➢ Implemented k-means, spectral clustering, Latent Dirichlet Allocation and other Natural Language Processing (NLP) algorithms in Java to extract the medication patterns from the EMR text for cirrhotic ascites clinical decision support.

➢ Evaluated the extracted knowledge by verifying with doctors in the aera of cirrhotic ascites.

➢ Developed a Java-JavaScript-HTML-CSS based website demo for medical data import, medication pattern extraction and ultrasonic testing data analysis.

Multi-dimensional Personal Health Data Acquisition and Monitoring App 04/2016-04/2017

Beijing Jiaotong University, Beijing, China, Part-time Undergraduate Research

➢ Implemented a Java based android application with modules which can intelligently identify the changes of different motion states (e.g., walking, running, upstairs, downstairs) of mobile phone users, scan and identify the paper medical records and then translate them into to portable electronic medical records (EMR), and integrate the collected motion data and EMR data for further analysis.

➢ Built a SQL database in remote server to record the collected data sent from the application.

INTERNSHIP & EXTRACURRICULAR ACTIVITIES

Algorithm Implementation Intern, Institute of Software, Chinese Academy of Sciences 05/2019-12/2019

➢ Reviewed and summarized related papers on the topic of the evaluation of the autonomy unmanned systems.

➢ Extracted key information from the environmental policy documents with NLP technique.

Developer Intern, Air China Media Co., Ltd. 07/2016-12/2016

➢ Developed the website of a Cooperative Editing System via C++, SQL, HTML, CSS, Java Script. Worked in both frontend, backend, interface and database building.

PUBLICATIONS

Multi-Head Spatio-Temporal Attention Mechanism for Urban Anomaly Event Prediction. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol*. 5, 3, Article 104 (Sept 2021), 21 pages.

Station Correlation Attention Learning for Data-driven Bike Sharing System Usage Prediction, in *Proceedings of IEEE 17th International Conference on Mobile Ad Hoc and Smart Systems (MASS 2020)*, (Delhi NCR, India), pp. 640--648, December 10--13, 2020.

Discovering Medication Pattern from High-Complexity Drug-Using Diseases Through Electronic Medical Records, *IEEE Access*, vol. 7, pp. 125280-125299, 2019.

Some picture fuzzy Dombi Heronian mean operators with their application to multi-attribute decision making*, Symmetry,* 2018 Nov, 10(11):593.

Some q-rung dual hesitant fuzzy Heronian mean operators with their application to multiple attribute group decision-making, *Symmetry,* 2018 Oct ,10(10):472.

Software Copyright, Multi-dimensional Personal Health Data Acquisition and Monitoring App, Registration No. 2017SRBJ0628.

AWARDS

Honorable Mention, Mathematical Contest in Modeling (MCM), Mathematical Association of America 04/2018
Honorable Mention, Share Cup of National Scientific Data Sharing Platform for Population and Health 03/2018
National Honor, National College Student Innovation and Entrepreneurship Training Program Project 2017