Jialin Li

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EDUCATION

The Ohio State University	08. 2017 - Present
Ph.D. in GIS, Department of Geography	GPA 4 / 4
Dual M.S. in **Computer Science**, Department of CSE	GPA 3.96 / 4
Central South University, Department of Geomatics	09. 2010 - 05. 2017
B.S. in Geomatics	GPA 88.45 / 100
M.S. in GIS	GPA 3.8 / 4

PROFESSIONAL EXPERIENCE

Semantic information extraction from choropleth map images (Research Project) 01. 2020 - present

- Identified whether a given image is a map, and identified its geographic region and projection, if it is a map using three machine learning methods (i.e., SVM, MLP and CNN) by Keras and LIBSVM in Python
- Detected map elements (titles and legends) by finetuning generic object detection models (Faster R-CNN and YOLO models) using TensorFlow and PyTorch in Python
- Recognized texts in titles and legends using easyOCR library and detected legend symbols using OpenCV
- Trained our name entity recognition (NER) model to identify topics of choropleth maps using SpaCy library
- Extracted attribute values of categories for legend symbols (legend analysis) after image enhancement, edge detection, rectangle detection and OCR for legend texts
- Identified attribute value of each states in the U.S. based on results of legend analysis and state identification

Optimization of Point Feature Label Placement (Research Project) 06. 2018 - 12.2018

- Proposed an agent-based model for label placement of point features on geographic maps
- Implemented the model in Python and compared with classical methods including linear programming

Spatial and temporal patterns of gas prices in Columbus, Ohio (Research Project) 09. 2017 - 06.2018

- Analyzed densities of high- and low- price gas stations using Kernel Density Estimation, and found the places in Columbus, Ohio with high- and low gas prices in general
- Explored spatial co-location patterns between high and low gas prices by Apriori algorithm in data mining
- Examined whether periodicity exists in the temporal change of spatial patterns using Fourier transformation

Modeling the Concentration of Air Pollution (Research Assistant) 06. 2015 - 10.2016

- Completed the missing observation data by a proposed space-time interpolation framework
- Analyzed relationship between various meteorological and human factors using spatial association mining
- Predicted the Concentration of Air Pollution in Beijing using spatial regression, extreme learning machine and multi-layer perceptrons

SELECTED PUBLICATIONS

Li Jialin et al., A Method of Spatial Interpolation of Air Pollution Concentration Considering Wind Direction and Wind Speed [J]. Journal of Geo-information Science. 2017,19(03):382-389.

Li Jialin et al., Residual Inverse Distance Weighting Spatial Interpolation Method Based on Spatial Heterogeneity Sub-region [J]. Geography and Geo-Information Science, 2015, 31(5):25-29.

Computer Skills

Languages: Main (daily use): Python **Experienced**: MATLAB, C++, C#, JavaScript **Used**: R, Java

Tools: OpenCV, easyOCR, spaCy, SQL Databases, SPSS, Simulink, Keras, TensorFlow, PyTorch

SELECTED AWARDS & HONORS

Travel Award in Spatial Analysis and Modeling Session in Annual Meeting of AAG	12.2017
Wuhan Area Code Craft 2016, Team Silver Medal	05.2016
National Scholarship of Chinese Government	09.2013