Jialin Li

(614)787-5776 li.7957@osu.edu

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

Basic map information identification using ML methods (Research Project) 12. 2018 - 05.2020

- 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)
- Implemented models using TensorFlow, Keras, and LIBSVM in Python
- Tested the abilities of the models to identify the information when the positions of map features are different and when the map features are distorted in shape

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

- 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 NER model to identify topics of choropleth maps using SpaCy library
- Matched colors in legend symbols with corresponding attribute values of categories based on the positions and alignments (legend analysis)
- Conducted template matching to identify the states in choropleth maps of the U.S. (state identification)
- Identified attribute value of each states in the U.S. based on results of legend analysis and state identification

Traffic objects detection (Hackathon of OSU) 10. 2019

- Detected the vehicles from street cameras in Columbus, Ohio using a pretrained YOLO model, and based on the counts of detected vehicles to identify whether there is a traffic congestion on the road
- By Mask R-CNN models, identified and localized bike lanes in downtown of Columbus, Ohio using images from Google Street View, and evaluated quality conditions of the bike lanes

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

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: Keras, TensorFlow, PyTorch, OpenCV, easyOCR, spaCy, SQL Databases, SPSS, LaTex

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