Jianshen Wang

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SUMMARY

- Creative, analytical, with a strong passion for industrial design, landscape design, and 3D modeling.
- High proficiency in geographic analytical tools, including ArcGIS, QGIS, Geomatica, ENVI, AutoCAD.
- Programming proficient with strong familiarity with Python and SQL.

EDUCATION

University of Waterloo Sep 2016 – Exp' Aug 2020
Bachelor of Environmental Studies, Major in Geomatics (Computing Technology Option) Waterloo, ON

- **Relevant Courses**: Approaches to Research in Physical Geography (89), Physical Climatology (87), Global Environment and Health (85), Multivariate Statistics (83), Geomatic Information System (81).

PROJECT EXPERIENCE

The Viability Analysis of Predicting PM2.5 Based on Satellite Remote Sensing Data Winter 2019
With Prof. Richard Kelly Waterloo, ON

- Explored and tested the possibility of using remote sensing only data to predict ground-level PM2.5 pollution to complement ground monitoring stations' blind spots, proposing a method that would save labor and time.
- Showed strong research skills from conducting extensive literature reviews to prove that at the present stage, study for a fixed area AOD to PM2.5 converting method is the mainstream research direction with higher accuracy.
- Built a model with maximized accuracy through combining ground based PM2.5 data from the American Embassy Air Quality monitoring website and AOD dataset from MODIS website.
- Applied outstanding programming skills, such as applying a modified version of Python script provided by NASA for extracting data and constructing a Python script to extract 35 ground station data.
- Showed high statistical proficiency in finding relations among data sets, such as running correlation, linear regression, normality test, etc. and making predictions using RStudio from GeoTIFF raw datasets.
- Developed a preliminary training model with 54% of the data being explained by the model, while the PM2.5 values from both prediction and reference shared a relatively matching trend.

Evaluating the Effect of Weather Condition on Forest Fire in BC in the 1990s: Risk Map Mapping Spring 2019
With Prof. Derek T. Robinson Waterloo, ON

- Evaluated the effect of weather conditions on forest fire in BC in the 1990s by creating risk maps, as part of a grand study that assessed the possibility of predicting potential fire spots/areas.
- Gained extensive research skills from researching about one factor regarding whether or not an area had had a fire before or how long this area had not experienced a fire.
- Demonstrated outstanding analytical skills from building a logistic regression (LR) model containing five columns (attributes) for the data set to classify the non-fire day and fire day between 1990 to 2000 in Cariboo, BC.
- Showed good command in analytical software such as Rstudio to establish a LR model to use logarithmic loss function and test the correlation between parameters.
- Successfully produced five maps in the project, including an SVM forest fire severity map, an LR forest fire possibility map, an SVM & LR fire severity map, a build-up year map, and an integrated map.
- Displayed a rigorous academic attitude by recognizing the foreseeable limitations or co constraining factors that could potentially decrease the accuracy of this study, leaving room for future improvement on the model.

Measuring Precipitation using Constructed Rain Gauges Fall 2019
With Prof. Maria Strack Waterloo, ON

- The study aimed to see if precipitation can be accurately measured using non-professional equipment through slight modifications to certain aspects of the tool, with an experiment involving the usage of rain gauges to measure precipitation depth that spanned 3 months.
- Gained training on field analysis from taking rain gauge measurements throughout the time span of the project.
- Gained training on spatial analysis from analyzing and comparing among different sets of data and with that of the UW weather station.
- Demonstrated strong analytical skills from analyzing the discrepancy of data, such as geographic location, elevation, the variability of weather, time of collection, etc.

EXTRACURRICULAR

Volunteer, Community Election Assistant, Waterloo, ON Oct 2014 – Nov 2014