WEIQUAN LUO

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EDUCATION

M.S. with Thesis at Iowa State University
Major: Biological System Engineering
Minor: Statistics
GPA: 3.65/4.00 | Graduated in Dec 2020

B.S. at Iowa State University
Major: Biological System Engineering
GPA: 3.66/4.00 | Graduated in Dec 2017

TECHNICAL SKILLS

- R
- Python
- MySQL
- Microsoft Excel & VBA
- Tableau
- Statistical Method
- Machine Learning

TEACHING ASSISTANT

Applied Numerical Methods
Fall 2016 to 2018 | Ames, IA

- Communicated with the instructor by weekly reports on the students' learning status.
- Enhanced students' learning experience by assisting in-class teaching and hosting a TA sections.
- Organized the course concept and demonstrated them to the students.

Engineering Graphics and Design
Spring 2014 to Fall 2015 | Ames, IA

- Received NO. 1 ranking in student evaluation within the department.
- Collaborated on curriculum, demonstrated modeling technique, and solved students' problems.

OTHER PROJECT

Cornell Birdcall Identification
Fall 2020 | Kaggle

Santander Customer Transaction Prediction
Fall 2019 | Kaggle

RESEARCH PROJECT

Multiscale Analysis Framework for WEF Nexus
Summer 2018 to Present | Ames, IA

- Independently developed a new modeling framework by applying probabilistic graphical models.
- Collected gigabytes of data from multiple sources with APIs.
- Designed a pipeline to integrate the heterogeneous data using object-oriented programming and parallel processing.
- Evaluated the model structure using network analysis to investigate the relationship between humans and the environment.

Analysis of the EIO Life Cycle Assessment
Winter 2019 | Ames, IA

- Collaboratively designed a workflow that evaluates 20 environmental impacts.
- Implemented split-apply-combine strategy to fit generalized linear models to each impact.
- Identified the outlier Industries in the supply chain using DBSCAN clustering.

Meta-analysis on Swine Manure and Fertilizer
Fall 2017 to Spring 2018 | Ames, IA

- Independently accomplished data collection and cleaning, modeling; collaborated on paper write-up.
- Extracted and analyzed 200+ data points from multiple research articles based on specific criterions.
- Conducted a Meta-analysis to compare the effects of manure and fertilizer on crop yield and the environment.

Beating the Odds: Success Strategies for At-Risk Students
Spring 2017 | Ames, IA

- Developed a classification & regression tree to identify at-risk first-term students based on pre-enrollment data.
- Determined and applied statistical methods to discover the relationship between first-year course performance and self-reported behaviors by risk categories.
- Used a random forest model to identify behaviors that differentiate at-risk students who "beat the odds."
- Protected participant privacy by implementing recommended procedures from a human subject research training.