

WEIQUAN LUO

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PROFILE

4+ years of experience in multidisciplinary research. Familiar with the complete procedure of data processing. Proficient in a wide range of machine learning and statistical methods. Interested in applying machine learning to business domains and web application. Seeking full-time opportunity in data analytics/engineer/scientist position.

KEY SKILLS & CERTIFICATE

Machine learning and Statistics:

Deep learning, Tree-based model,
Regression model, Experimental design

Certificate:

Tableau Specialist Certificate
Google Project Management Certificate

Software:

Python (scikit-learn, Tensorflow, NumPy, pandas)
R (tidyverse, ggplot2, caret, Shiny)
Excel (vlookup, sumifs, Solver, PivotTable, VBA)
Tableau, Java, MySQL, JMP,
Git, html, css

EDUCATION

Master of Science

Major: Agricultural and Biosystems Engineering, Minor: Statistics, GPA: 3.65/4.0

Iowa State University, Ames, IA, US

Jan 2018 - May 2021

Bachelor of Science

Major: Biological Systems Engineering, GPA: 3.66/4.0

Iowa State University, Ames, IA, US

Aug 2013 - Dec 2017

PROJECT

Algorithm and architecture in recommendation system

Jan 2021 - Present

- Familiar with the data flow diagram of industrial-grade recommendation system architecture.
- Tested collaborative filtering models for personalized and diversified recommendations, such as nearline **DSSM** and offline **ALS matrix factorization** for matching, and **XGBoost+LR**, **factorization machines**, and **wide&deep** for ranking with the MovieLens dataset.

E-commerce business analysis on advertising strategy

Dec 2020 - Jan 2021

- Built user profile, including the temporal and spatial distribution of users and prices on Amazon sellers' order data.
- Formulated groups-based advertising strategies classified by **RFM model**; formulated geographical-based operating strategies based on **cross-analysis** of the user's geographical distribution and price sensitivity.
- Developed short-, medium- and long-term brand planning with **Boston Matrix**.

Bird song classification with multiclass deep learning

Oct 2020 - Dec 2020

- Developed a classification model using short-time Fourier transform, **data augmentation**, and **residual network**.
- Classified 25GB audio data under 16 GB memory limitation with small batch **data-feeding** method.
- Improved the convergence speed and prediction accuracy by locating positive samples based on intensity threshold.

Portfolio Website: weiquanluo.github.io

Jan 2019 - Present

- Managed projects and study note on GitHub website, receiving 2k views monitored by **Google Analytic**.

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, "Multiscale Analysis Framework"

Jun 2018 - Dec 2020, *Iowa State University*

- Designed a multiscale analysis framework consisting of **Markov random field** model and **network analysis**.
- Collected gigabytes of spatiotemporal data from multiple sources using **APIs** and **web scraping**.
- Speeded up the data processing by executing the **ETL** on different cores for nine specific spatiotemporal scales.
- Characterized the interlinkages among natural resources using **network statistics**.
- Assisted other team members on advance modeling with non-technical communication.

Research Assistant, "Success Strategies for At-Risk Students"

Aug 2017 - Dec 2017, *Iowa State University*

- Discovered critical variables for At-Risk Students to succeed with methods, including **random forest** and **Anova**.
- Processed data with Excel **vlookup** and **sumifs**, while protected participant privacy following HSR guideline.

Teaching Assistant, "Applied Numerical Methods"

Aug - Dec 2016, 2017, 2018, *Iowa State University*

- Mentored students on optimization theory and method using Excel **Solver** and **Goal Seek**.
- Evaluated students' work; reported student learning status to instructor to track weekly teaching quality.