WEIQUAN LUO

Pittsburgh, PA | (845) 729-1221 | weiquan.luo1221@gmail.com
linkedin.com/in/weiquanluo | weiquanluo.github.io

EDUCATION

Master of Science Iowa State University, Ames, IA, US
Major: Agricultural and Biosystems Engineering, Minor: Statistics, GPA: 3.65/4.0 Jan 2018 - May 2021

Bachelor of Science Iowa State University, Ames, IA, US
Major: Biological Systems Engineering, GPA: 3.66/4.0 Aug 2013 - Dec 2017

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)
Matlab, Tableau, Java, MySQL, JMP, PMOD
Git, html, css

PROFESSIONAL EXPERIENCE

Data Analyst Sept 2022 - Current 2022, *PET Center, University of Pittsburgh*

- Sampled PiB SUVR by processing human brain MR and PET data to support Alzheimer's disease diagnosis.
- Surveyed on image **registrations techniques**, **template generation methods**, and **harmonization problem**.
- Compared three template generation methods in spatially normalizing 138 Down Syndrome MR scan and generating cohort-specific MR template with **structural similarity index** and **normalized mutual information**.
- Automating PET-only quantification by developing cohort-specific PET templates and novel registration methods.

Business Data Analyst, Intern Apr - Aug 2021, *PF & XF Inc.*

- Formulated the analysis framework as a reserved toolbox to support decision making during business expansion.
- Developed a groups-based advertising strategies classified by **RFM model** and 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 using **Boston Matrix**.

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 significant relations among natural resources using **network statistics**.

Research Assistant, "Meta-analysis on Swine Manure and Fertilizer" Oct 2017 - Jun 2018, *Iowa State University*

- Conducted Meta-analysis to comparing the effect of swine manure and commercial fertilizer on crop yield, water quality, gas emissions, and soil physicochemical properties.

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 **ANOVA** and **random forest**.

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**.

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 matching **with matrix factorization** and **DSSM**, and ranking with **XGBoost+LR**, **factorization machines**, and **wide&deep** on the MovieLens dataset.

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 audio data into 265 species under memory limitation with small batch **data-feeding** method.
- Improved the convergence speed and prediction accuracy by locating positive samples based on intensity threshold.