

WENTAO LIN

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EDUCATION

Case Western Reserve University

Cleveland, OH | Aug. 2020 - May 2024

- Bachelor of Science in **Data Science and Analytics** (*cum laude*, GPA: **3.89/4.0**), Minor in **Economics**
- Coursework: Econometrics, Artificial Intelligence, Machine Learning for Big Data, Data Engineering, Algorithms
- President, Spartan Running Club; Programmer - *tama*, WRUW-FM 91.1 (radio station)

SKILLS

Programming Languages: Python, SQL, R, Java, Javascript, HTML, CSS, Stata

Tools: AWS, scikit-learn, Numpy, Pandas, Matplotlib, Tensorflow, Jupyter Notebooks, GEE, QGIS, Unix, Microsoft Office Suite

Spoken Languages: English, Mandarin Chinese, Japanese

TECHNICAL EXPERIENCE

CTrees, Data Science and Remote Sensing Intern - (AWS EC2, S3, Python, QGIS)

Pasadena, CA | Jul. 2024 - Present

- Utilize **machine learning** to **estimate carbon globally** across forest and non-forest areas at **1-ha spatial resolution**
- **Ingest and process satellite data** for model training and deliverables, including noise **masking**, handling missing data, **harmonizing** multi-source data, and **transforming** datasets for compatibility
- **Optimize data pipeline**, reducing runtime by **98%** (from 50 hours to 1 hour) and cutting cloud computing costs by **99.6%** (from \$500 to \$2)

Case Western Reserve University, Undergraduate Research Assistant

Cleveland, OH | Jan. 2024 - May. 2024

Department of Mathematics, Applied Mathematics, and Statistics - Professor Sakshi Arya

- Developed a strategy using **reinforcement learning** to **optimize agricultural decisions** aimed at maximizing crop yield
- **Tested multiple hypotheses** to address the research problem and identified promising solutions through **data analysis**
- Implemented a **model pipeline** to integrate a crop simulation model with **R**, resulting in **improved simulation efficiency**

NASA Jet Propulsion Laboratory, Data Science Intern, UAVSAR Mission

Pasadena, CA | Jun. 2023 - Dec. 2023

Fall 2023 - (Python, QGIS, Unix)

- Conducted **data manipulation** and **data analysis** using **pandas** to organize and join data from various sampling methods
- Investigated different soil characteristics using **regression analysis**, including **random forest** and **SVM**
- Applied **ensemble learning** and **data visualization** to establish relationship between fuel moisture and **polarimetric data**
- Streamlined summer wildfire product by using opposite slopes to treat missing data and reducing procedures from **10+ to 1**

Summer 2023 - (Python, QGIS, Unix)

- Preprocessed **large-scale data** into **raster format** using ENVI header files and integrating various **time series datasets**
- Researched and evaluated multiple **supervised and unsupervised classification** algorithms for **image segmentation**
- Developed a product to **classify wildfire** perimeter and burn severity **mapping with GIS** compatible GeoJSON outputs
- Utilized Rasterio, GeoPandas, and skimage for **image processing**, leveraging Synthetic Aperture Radar backscatter values
- **Created a tutorial on GitHub**, featuring a sample fire dataset, comprehensive documentation, and installation instructions

PROJECTS ([demo](#))

Timbre, a web-based music social media (Python, PostgreSQL, Node.js, React)

Fall 2023

- Designed and implemented the database, including stored procedures and indexes for **data integrity** and **query efficiency**
- Formulated **user-matching procedure** and **optimized compatibility score calculation** to display top matches on frontend
- Integrated **SQL and Javascript functions** to process frontend requests and **facilitate real-time database updates**

Reddit Sentiment Analysis Using Deep Learning (Python, TypeScript, AWS) - NLP

Spring 2023

- Designed an **API-driven data ingestion pipeline** for the full-stack application by processing 25 trending headlines from user-specified subreddits via the Reddit HTTP API, for **tokenization**, **preprocessing**, and **analysis**

ADDITIONAL EXPERIENCE

Case Western Reserve University, Teaching Assistant

Cleveland, OH | Sep. 2022 - May. 2024

CSDS 341 - Introduction to Database Systems (Microsoft SQL Server, PostgreSQL, My SQL) - Professor Dianne Foreback

- Utilize **hand-drawn diagrams** in office hours to effectively clarify lecture materials and homework assignments
- Design homework problems to apply **SQL concepts**, involving drawing **ER diagrams** and **optimizing queries**