Menglin Wang

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EDUCATION

Cornell University Aug 2021 – May 2023
- MS in Materials Engineering (College of Engineering) GPA: 3.84/4.3
- Minor in Computer Science
- Coursework: Object-Oriented Programming & Data Structures (Java), Design and Programming for the Web, App design and Prototype, Cloud Computing, Big Data Analytics and Machine Learning, Natural Language Processing

Anhui University, China Aug 2016 – June 2020
- BE in New Energy Materials and Devices (Grade Rank: 1/ 45) GPA: 87.5/100

TECHNICAL SKILLS

- **Languages** Java, Python, JavaScript, PHP, SQL, HTML/CSS
- **Frameworks** Angular, Flask, REST API, Bootstrap, Node.js, Vue.js, Pytorch, Ajax
- **Platforms** Microsoft Azure, CosmosDB, MySQL, Docker, Git
- **Analytic Tools** Numpy, Pandas, Matplotlib, Scikit-learn, NLTK

EXPERIENCE

- **J2 Lab, Cornell University** Oct 2021 – May 2023

  Research Assistant, supervised by Jingjie Yeo, Carla Gomes
  - Performed data preprocessing for ceramic materials (over 1000) by **Numpy**/**Pandas**. Targeted and encoded descriptors (over 140) using **Python**. Applied feature selection using **RFECV** and ranking using permutation importance
  - Tuned the hyperparameters using **GridSearchCV**. Constructed the ML models of **XGBoost**, **Random Forest**, **SVR** with the best accuracy over 92%. Built the ML pipeline and deployed ML models on **Azure Machine Learning**
  - Developed new materials searching application using **Angular** and **Node.js**, front-ended with an interactive periodic table. Implemented data storage with **MySQL**. Integrated **Materials Project API** to provide related materials insights

PROJECT

- **Cloud Computing Project, Intelligent Safety Records Tracking Platform** Sep 2022 – Dec 2022

  Full Stack Developer
  - Constructed and developed a real-time analytic platform using **Python**/**Flask** based on **Microsoft Azure** and **MVC**
  - Implemented data storage (over 1 million) by **CosmosDB**/**NoSQL.** Showed records on an interactive map by **Leaflet.js** and trend by **Plotly**. Provided live/travel decision with statistical model, and notification by **Azure Function**
  - Evaluated system by **Apache Bench**. Boosted performance by **Redis**. Structured controller layer to achieve asynchronous requests using **REST API**. Created and deployed Flask and Redis containers on **AKS** for scalability
- **Progressive Web App, Vegetable Varieties for Gardeners** Sep 2022 – Dec 2022

  Team Lead & Front-end Developer
  - Led the design and implementation of a high-fidelity web app with **Vue.js**, **HTML** and **JavaScript** for Cornell Garden
  - Gathered clients' requirements, conducted 3 rounds user research from 12 users and created personas and scenarios. Designed user interface and wireframes for each functionality and conducted several rounds of user tests
  - Developed registration, login/logout interfaces with **BootstrapVue3.** Reviewed pull request and create release by **Git**
- **NLP Project, Company Acquisitions: Tweets Sentiment Analysis System** May 2022 – Aug 2022

  Machine Learning Engineer
  - Performed sentiment analysis on acquisition-of-twitter-by-Elon themed tweets using **PyTorch** on **Jupyter Notebook**
  - Conducted data crawling (over 50000) using **Tweepy** and cleaning with **NLTK**. Implemented **FFNN, RNN**, **LSTM** for analysis with the best accuracy 84.7%. Augmented the analysis through Named Entity Recognition by **Spacy**
  - Provided detailed picture on how people relate to the topic of company acquisitions and visualized by **Displacy**
- **Full Stack Project, Online Playful Plants Catalog Website** Dec 2021 – April 2022

  Team Lead & Full Stack Developer
  - Designed and implemented of a multi-page catalog website with **HTML**/**CSS**/**JavaScript** for Cornell Playful Plant
  - Interfaced with clients and conducted user-centered design. Designed and initialized database schema with 5 tables
  - Implemented data storage with **SQLite**. Handled **HTTP** requests/router and user sessions for login/logout by **PHP.** Implemented search/filter for users and edit for clients. Refined queries with DB transactions and requests with **Ajax**