

# CHING-WEN WANG

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## EDUCATION

### University of Wisconsin - Madison

Bachelor of Science in Statistics, Minor in Computer Science; GPA 3.8/4.0

Wisconsin, U.S.

May 2021

**Selected Coursework:** Stochastic Processes, Time Series Analysis, AI, Machine Learning, Deep Learning, Programming (Java, Python), Optimization, UX Design, Regression Analysis, Nonparametric Statistics, Microeconomics, Macroeconomics

**Portfolio:** <https://jasminewang553.github.io/Jasmine-s-Portfolio/>

**Honors:** 4 semesters in Dean's List

## PROFESSIONAL EXPERIENCE

### UW-Madison Skunkworks Informatics

Machine Learning Research Intern

Wisconsin, U.S.

Jan 2021 - Present

*Apply cutting-edge data science and natural language processing (NLP) techniques in material science*

- Build and run a systematic framework in Python for extracting chemical properties from research papers published in material science, persist extracted structured data in SQL database for researchers' further use
- Construct rule-based parsers to extract bulk modulus information of various chemical entities from the corpus
- Modify ChemDataExtractor, a state-of-art NLP method in chemistry, to enhance the performance and accuracy of the process
- Lead group of 6 students in completing weekly goals and facilitate communication between group members

### UW-Madison Department of Life Sciences Communication

Undergraduate Research Analyst

Wisconsin, U.S.

Sept - Dec 2019

*Empirical and quantitative analytics in political science*

- Investigated data to assist Professor Kaiping Chen in composing a proposal for the United Nation's Voice of the Hungry project organized by the Food and Agriculture Organization
- Built data pipeline for wrangling materials from Gallup World Poll questionnaires; explored, organized, and analyzed cleaned data, e.g. summary statistics, correlation analysis, cohort studies in R; visualized analytical results for team's use

### UW-Madison Richard A. Anderson Lab

Undergraduate Lab Assistant

Wisconsin, U.S.

Sept 2018 – Sept 2019

*Technical support and daily financial operations*

- Maintained and balanced budget (~ \$1M in total) and built projection model for future lab expenditures based on historical data with lab financial manager using Excel and Python
- Optimized and systemized budget management process by organizing product orders into spreadsheets and checking on financial status with research scientists during weekly meetings

## PROJECT EXPERIENCE

### Covid-19 detection from X-ray images UW-Madison Course Final Project

Feb – May 2021

- Built models in detecting Covid-19, lung opacity, viral pneumonia, and healthy lungs from chest X-rays with deep learning image classification models (CNN) e.g. AlexNet, VGG, ResNet, and compared results with a benchmark model (Logistic Regression)
- Evaluated models based on high recall rate in COVID-19 and viral pneumonia diagnosis
- Displayed images using GradCAM to visualize focus region of CNN model layers

### Classification of Heart Failure Patients, UW Data Challenge

Sept – Oct 2020

- Built a model to predict the death rate of heart failure patients given different heart conditions and chronic diseases of patients
- Won the best oral presentation award out of 30+ groups

### Knowledge Graph Construction, UW-Madison Course Final Project

Sept – Dec 2020

- Determined the best tool in constructing knowledge graph from real life texts from 3 different packages: spaCy, Stanford OpenIE, and Stanford Scene Graph Parser

## ADDITIONAL INFORMATION

**Computer:** R, Python, SQL, Java, Microsoft Excel, PowerPoint, Natural Language Processing

**Qualification:** Financial Mathematics Exam Certification (Society of Actuaries)

**Interest:** Cooking, Piano, Reading