Ming H. Wang

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Education

University of Wisconsin at Madison — Madison, WI

Computer Science and Economics — *Expected Graduation: May 2026*

- Coursework: Operating Systems, Algorithms, Building User Interface, Database Management, Big Data, Intro to AI, Data Analytics for Economists, Money and Banking

Skills

- **Languages**: Python, Java, SQL, JavaScript, C++
- **Version Control**: Git, GitLab
- **Operating Systems**: Linux, Windows
- **Tools & Technologies**: Docker, Spark, React.js, RPC, Cassandra, Google Cloud, Tableau, ArcGIS Pro

Experience

Undergraduate Researcher — September 2024 - Present

Spatial Computing and Data Mining Lab — *Madison, WI*

- Conducting machine learning models for streamflow prediction, analyzing hydrological patterns in large-scale river networks.
- Implementing Empirical Mode Decomposition to extract Long Short-Term Memory and improve flood prediction accuracy
- Processing over 5GB of high-resolution spatiotemporal data using PyTorch and parallel computing techniques
- Optimizing data imputation models, enhancing prediction accuracy by 15%, reducing error rates in missing environmental data

Peer Mentor/Teaching Assistant — January 2023 - December 2023

UW-Madison — *Madison, WI*

- Held 15+ office hours weekly to provide support for students in Java/Python programming courses, ensuring effective assistance
- Assisted over 500 students each semester, guided them through coding challenges, debugging, and refining their solutions
- Participated and delivered lesson discussion and presentations to reinforce core programming concepts, facilitating active learning
- Received positive feedback from over 250 students for clear and effective communication and personalized support

Projects

Machine Learning Projects | Link

- Enhanced decision-making speed by 25% in Tic-Tac-Toe using the Minimax, Alpha-Beta pruning computing via multiprocessing
- Achieved over 90% accuracy in image classification using Convolutional Neural Networks (CNNs) to identify potential matches by generating photorealistic faces based on key descriptions and facial features

Docker and gRPC | Link

- Utilized Docker containers for scalable deployment, ensuring high availability and efficient memory management
- Built a fault-tolerant, load-balanced microservice using gRPC and HTTP with LRU caching, optimizing response times for ZIP code-based home lookup services

Database Management | Link

- Designed and implemented a relational database schema in MySQL to store and efficiently query large-scale eBay auction data
- Transformed over 900KB large JSON datasets into structured relational data, executing SQL queries for advanced analytics

Health Insurance in America | Link

- Analyzed 10 years of U.S. health insurance data using Census Bureau's APIs, uncovering trends in coverage disparities
- Leveraged Matplotlib, Seaborn, and GeoPandas to create interactive time-series geospatial visualizations, providing insights into healthcare spending inequalities