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Manlin Zhang

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Education

Master of Science in Data Science, *University of California, San Diego* **Sept 2024 - Jun 2026 (Expected)**
- GPA: 3.7/4.0
- Relevant Coursework: Database Structure, Data Mining, Machine Learning, Deep Learning

Bachelor of Science in Mathematics, *University of Wisconsin-Madison* **Sept 2020 - May 2024**
- GPA: 3.7/4.0
- Relevant Coursework: Abstract Algebra, Real Analysis, Statistics, Probability Theory, Graph Theory

Skills

Programming	Python (Scikit-Learn, PyTorch, TensorFlow), SQL, R, Linux, Java, OS, MATLAB, LaTeX
Tools & Platform	Tableau, Git, PostgreSQL, MySQL, Neo4j, GCP, AWS, Word, Excel, PowerPoint
Communication	Mandarin (native), English (proficient)

Work Experience

Research Assistant **Oct 2023 — May 2024**
People and Robots Laboratory, University of Wisconsin-Madison *Madison, WI*
- Developed a telepresence robot using Raspberry Pi SDK, ROS, and Python to facilitate remote tours for homebound individuals and people with disabilities
- Engineered LLM-based conversational models (GPT-3, GPT-4) through advanced prompt design to ensure responsive and interactive user experiences
- Performed A/B testing and ANOVA on interaction log data to analyze user behavior and enhance system performance

Data Analyst Summer Intern **June 2023 — July 2023**
JD.com, Inc. *Beijing, China*
- Extracted, processed, and analyzed over 10M rows of customer data in MySQL, using Python and SQL to identify churn drivers
- Designed and executed A/B tests for new app features, leading to a 23.5% increase in UV and a 15% growth in GMV
- Automated data pipelines, reducing manual reporting by 40% and improving data accessibility across teams
- Built Tableau dashboards to visualize customer trends, enabling data-driven decisions in marketing and sales optimization

Technical Experience

Bird Call Recognition using Deep Learning and Acoustic-Based Feature Selection **Jan 2025 — Present**
San Diego, CA
- Extracted and processed 16K+ audio recordings using Python (librosa, Pytorch) to generate structured feature datasets
- Analyzed audio feature sets (MFCCs, spectral features, rhythm-based attributes) and converted raw audio to Mel spectrograms
- Evaluated the performance of machine learning models (Random Forest, XGBoost, SVM) and deep learning pipelines (CNN, EfficientNet), achieving 89.8% accuracy with Logistic Regression and reducing processing time by 6x

Wildfire Modeling and Tree Species Classification Using Machine Learning Method **Feb 2025 — Apr 2025**
San Diego, CA
- Applied models (Random Forest, XGBoost) to predict plant functional type (PFT) and species distribution from Terrestrial Laser Scanning data, achieving a 95%+ accuracy in PFT classification and 85% accuracy in genus/species identification
- Built a pipeline to clean, transform, and extract tree data from USDA database, reducing preprocessing time and improving the accuracy of model by 10%
- Integrated FastFuels API to produce pseudo label of tree lists from TLS data, enhancing scalability and reducing manual processing effort by 40%

Movie Recommendation System With Graphic Network Database **Jan 2025 — Mar 2025**
San Diego, CA
- Built a graph-based movie recommendation system using Neo4j by transforming 50K+ rows from MovieLens 25M and IMDb datasets, reducing query time from 900ms to 300ms by optimizing relationship traversals
- Developed hybrid recommendation models by integrating collaborative filtering (user behavior) and content-based filtering (movie metadata), and visualized user trends and content popularity through Tableau dashboards
- Designed Cypher queries to handle complex tasks, such as identifying underrated movies and prioritizing award-winning films (e.g., Oscar-nominated), improving recommendation diversity and personalization

Activities

ProWESS Coding Sprint, 2nd Place, San Diego Supercomputer Center — Winter 2025
ACM Conference on Designing Interactive Systems 2024: Workshop, Participants — Summer 2024
Undergraduate Research and Creative Works Showcase, University of Wisconsin-Madison, Research Presenter — Spring 2024
College of Letters and Science, Department of Mathematics MXM Project Showcase, Research Presenter — Fall 2023