Ahmad Mersaghian ahmad_mersaghian@yahoo.com

EDUCATION

University of California, Riverside
- Master of Science (M.S.), Major: Computational Data Science
- Cumulative GPA: 4.00

Loyola Marymount University, Los Angeles
- Bachelor of Science (B.S.), *magna cum laude*, Major: Biology, Minor: Computer Science
- Cumulative GPA: 3.85

PROJECTS

AI Student Tutor
- Implemented a Retrieval-Augmented Generation (RAG) pipeline using pretrained LLaMa and DeepSeek models to answer queries based on uploaded PDF.
- Designed and implemented Perplexity system to select the best model based on the query while allowing model selection in the UI.
- Found that for short queries LLaMa is chosen two-thirds of the cases, while also exhibiting a shorter response time and lower energy use on average.

End-to-End Data Pipeline with PySpark, PostgreSQL, and Flask
- Cleaned and transformed three large datasets using PySpark for efficiency.
- Created a PostgreSQL database to store the cleaned datasets using indexing for faster performance.
- Used Flask web framework to build a web interface for querying and displaying results from the database.

AI Course Scheduling Assistant
- Built a chatbot-driven course scheduler with React frontend and FastAPI backend, generating personalized, conflict-free schedules.
- Designed a multi-agent backend using Google ADK to handle scheduling, preferences, and conversational interactions.
- Integrated BigQuery data and real-time calendar visualization for dynamic, student-friendly schedule planning.

EXPERIENCE

Graduate Research Assistant
Dr. Mingxun Wang – Riverside, CA October 2024-Present
- Tested pre-trained Neural Network & Graph-Neural Network MS prediction models to determine modification site accuracy between known and unknown chemical compounds.
- Trained selected models using NIST-20 commercial dataset which was tested against random baselines and other computational methods such as ModiFinder.
- Designed and implemented new performance metrics to identify the best model as well as improving the performance by combining models using PoE.

Undergraduate Research Assistant August 2021-May 2023
Dr. Sarah J. Bittick – Los Angeles, CA
- Assisted with literature reviews to gather data about seagrass species.
- Analyzed Experimental data by producing presentable graphs in R-Studio.
- Led field experiments to collect eDNA samples for Pacific eDNA Coastal Observatory (PECO) project.

Undergraduate Research Assistant & Rains Research Assistant January 2021-May 2023
Dr. Kam D. Dahlquist – Los Angeles, CA
- Performed Quality Assurance associated with user interface.
- Processed data for production of gene clusters using Short Time-series Expression Miner (STEM).
- Added new dataset from published articles to GRNsight database.
- Link to the Web Application

Teaching Assistant	Semesters/Quarters	University
Physics I (Kinematics)	Falls 2021-2022	LMU
Physics II (Electrostatics)	Springs 2022-2023	LMU
Marine Biology Lab	Spring 2023	LMU
Grader		
General Biology I (Principles of biology)	Fall 2020	LMU
General Biology II (Mechanism of evolution)	Spring 2021	LMU
Intermediate Data Structures and Algorithms	Winter, Spring, Summer 2025	UCR

SKILLS

- Programming & Tools: Python, SQL, Bash, PySpark, Pandas, HTML/CSS, JavaScript, Git
- Machine Learning & AI: PyTorch, Hugging Face Transformers, scikit-learn, Retrieval-Augmented Generation (RAG)
- Relevant Coursework: Artificial Intelligence, Large Models and Advances in AI, Data Exploration and Analysis, Data Mining

PRESENTATIONS & POSTERS

POSTERS

Mersaghian, A., & Bittick, S. (April, 2023). "Analysis of Blue Carbon Stock and Sediment Characteristics of Zostera marina". Presented at the 46th West Coast Biological Sciences Undergraduate Research Conference (WCBSURC), Los Angeles, CA.

Mersaghian, A., Tran, N., Tadesse, S., Dahlquist, K., & Dionisio, J. (March, 2023). "Improved Functionality of GRNsight 6.0: a Web Application for Visualizing Gene Regulatory Network Models". Presented at the 14th Annual LMU Undergraduate Research Symposium, Los Angeles, CA.

Mersaghian, A., & Bittick, S. (March, 2023). "Analysis of Blue Carbon Stock and Sediment Characteristics of Zostera marina". Presented at the 15th Annual LMU Undergraduate Research Symposium, Los Angeles, CA.

Mersaghian, A., Dahlquist, K., & Dionisio, J. (April, 2022). "A New Gene Expression Dataset for GRNsight: a Web Application for Visualizing Gene Network Models". Presented at the 45th West Coast Biological Sciences Undergraduate Research Conference (WCBSURC), San Diego, CA.

Mersaghian, A., Tadesse, S., Dahlquist, K., & Dionisio, J. (March, 2022). "A New Gene Expression Dataset for GRNsight: a Web Application for Visualizing Gene Network Models". Presented at the 14th Annual LMU Undergraduate Research Symposium, Los Angeles, CA.

Igbinedion, O., Green, I, **Mersaghian, A.**, Dahlquist, K., & Dionisio, J. (March, 2021). "More Robust Testing of Data and UI for GRNsight: Web Application for Visualizing Models for GRNs". Presented at the 13th Annual LMU Undergraduate Research Symposium, Virtual.

AWARDS AND HONORS

William McLaughlin Scholarship Recipient (LMU)	2021-2023
Seaver College Summer Opportunities for Advanced Research (SOAR)	Summer 2022
Dean's List	2019-2023