

Allison Austin

<https://allieaus.github.io/>

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Education

University of California, Davis

2023-Present

PhD, Computer Science

Advisor: Dr. Kwan-Liu Ma

California State University, Long Beach

2019 - 2023

Bachelor of Science, Computer Science

Advisor: Dr. Bo Fu

Publications

Allison Austin, Logan Tang, Justin Mueller, Andrew Norman, Kwan-Liu Ma. "Predictive Modeling of High Energy Physics Workflows on Federated HPC Batch Systems." (*under review*).

Allison Austin, Shilpika, Aditya Tanikanti, Venkatram Vishwanath, Michael E. Papka, Kwan-Liu Ma. "Interactive Visual Analytics for Generating and Exploring LLM-Predicted Protein-Protein Interactions." In *Proceedings of the 17th International Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB 2026)*.

Allison Austin, Shilpika, Yan To Linus Lam, Yun-Hsin Kuo, Venkatram Vishwanath, Michael E. Papka, Kwan-Liu Ma. "Understanding Large-Scale HPC System Behavior Through Cluster-Based Visual Analytics." In *ISC High Performance 2026 Research Paper Proceedings (41st International Conference)*.

Bo Fu, **Allison Austin**, and Max Garcia. "Visualizing Mappings Between Pairwise Ontologies - An Empirical Study of Matrix and Linked Indented List in Their User Support During Class Mapping Evaluation." In *Proceedings of the 22nd International Semantic Web Conference (ISWC 2023)*, LNCS, Springer, 2023.

Research

Experience

Visualization and Interface Design Lab at UC Davis

Graduate Student Researcher

Sep 2023 - Present

- Supervised by **Dr. Kwan-Liu Ma**.
- Researched methods for anomaly detection and hardware behavior clustering in HPC performance data for monitoring and root cause analysis of system failure (published work in ISC 2026).
- Experimented with different streaming visualization designs for displaying variation and similarity in sensor readings using different functional data analysis techniques.

Fermi National Accelerator Laboratory

Computational Science Intern

July 2026 - Oct 2026

- Supervised by **Dr. Andrew Norman**.
- Conducted research on modeling and predicting job behavior from large-scale batch queue system data.
- Applying advanced visualization techniques to HPC monitoring data for analysis and ML prediction interpretation.

Argonne National Laboratory

Research Aide

June 2025 - Sep 2025

- Supervised by **Dr. Shilpika** at the Computing, Environment, and Life Sciences (CELS) division of the Argonne Leadership Computing Facility (ALCF).
- Worked on evaluating LLM-generated protein-protein interactions through visual analytics.
- Researched LLM evaluation/visualization methods and techniques for enhancing real-time graph network visualizations.

- Published and presented internship work at ACM BCB 2026.

Data Semantics and Human-Data Interaction Lab at CSULB

Research Assistant

Aug 2022 - May 2023

- Supervised by **Dr. Bo Fu**.
- Conducted large-scale user study of two ontology visualization techniques in their visual support during human evaluation of class mappings using eye tracking data.
- Evaluated the extent to which a given visualization supported the recognition of visual cues, validation of existing mappings, and creation of new mappings.
- Published and presented work at ISWC 2023 conference.

Industry Experience

Nihon Kohden Digital Health Solutions

Data Engineer Intern

May 2021 - Aug 2023

Researched methods for fitting time-series data and classification of alarm thresholds for reducing alarm fatigue.

Amazon

Data Engineer Intern

May 2022 - Aug 2022

Migrated large-scale ETL pipeline to Native AWS for real-time workforce management and analytics software.

Grad Course Projects

ECS 289L Advanced Deep Learning with Dr. Hamed Pirsiavash Fall 2023

Collaborated with another graduate student to research LLMs for anomalous log sequence prediction in HPC data. We experimented with additive attention mechanism and hierarchical attention network on GPT and BERT models. For our prediction task, the BERT model outperformed the GPT model for both datasets.

Awards

GGCS Travel Award	2026
UC Davis Computer Science Department Fellowship	2023
CSU's Program for Education and Research in Biotechnology (CSUPERB)	2022

Teaching Experience

ECS 162 Web Programming, <i>Teaching Assistant</i>	Spring 2025
ECS 170 Introduction to Artificial Intelligence, <i>Teaching Assistant</i>	Spring 2024

Community Involvement

Girls Who Code UC Davis, <i>Speaker</i>	May 2024
2023 BEACH Women in Engineering Conference, <i>Volunteer</i>	April 2023
COE/CNSM Transfer Student Panel, <i>Speaker</i>	March 2023
CSULB Women in Computing (WiC) Sisterhood, <i>Mentor</i>	Aug 2022-May 2023
2022 BEACH Women in Engineering Conference, <i>Volunteer</i>	April 2022
Mathematics, Engineering, Science Achievement (MESA), <i>Volunteer</i>	March 2022
Louis Stokes Alliance for Minority Participation (LSAMP), <i>Member</i>	2022-2023
CSULB CS Undergraduate Student Advisory Board, <i>Volunteer</i>	Feb 2022
CSULB Women in Computing (WiC), <i>Treasurer</i>	Aug 2021-May 2022
MarinaHacks, <i>Design Committee Volunteer, Sponsorship Committee Lead</i>	Jan 2021

References

Dr. Kwan-Liu Ma

Distinguished Professor of Computer Science at UC Davis
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Dr. Andrew Norman

Senior Scientist at Fermi National Accelerator Laboratory
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Dr. Shilpika

Postdoctoral Researcher at Argonne National Laboratory
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Dr. Bo Fu

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