MADISON SHERIDAN

+1(916) 790-7806 ◇ College Station, TX
madison.sheridan94@gmail.com ◇ linkedin.com/in/madison-sheridan/ ◇ https://helblindi.github.io

SUMMARY

Ph.D. in Mathematics with expertise in computational modeling, data analytics, and cost estimation. Experienced in developing **data-driven models**, performing **cost and performance analysis**, and building **automated analytics pipelines** using Python, C++, and MATLAB. Skilled in **data normalization, forecasting, and statistical analysis** with the ability to communicate results to technical and executive audiences. U.S. citizen with **active TS clearance (eligible for TS/SCI)** and strong interest in predictive analytics and cost engineering within space systems.

EXPERIENCE

Graduate Teaching/Research Assistant Aug 2019 - Dec 2025
Texas A&M University *College Station, TX*
Advisor: Jean-Luc Guermond

- Developed predictive computational models for multiphysics systems, integrating cost and performance parameters to analyze complex engineering behaviors.
- Conducted large-scale data validation and regression analyses to ensure reliability and consistency across simulation frameworks.
- Utilized Python and MATLAB for **data collection, normalization, and visualization**, supporting performance benchmarking and quantitative model evaluation.
- Led quantitative analysis and test result reporting to multidisciplinary teams, presenting data-driven insights on model performance.
- Instructor of Record for applied mathematics courses emphasizing data modeling and quantitative reasoning.

Graduate Student Intern - Computational Physics May 2022 - Sep 2023
Lawrence Livermore National Laboratory *Livermore, CA*
Mentor: Vladimir Tomov

- Implemented data analytics and cost-model validation tools for large-scale simulations using **Python, C++, and Git/GitLab** environments.
- Collaborated with multidisciplinary teams to **collect, normalize, and map simulation data** to standard structures for model validation and reporting.
- Conducted statistical analyses on test outcomes and created visualization dashboards summarizing performance trends.
- Developed automation scripts for continuous integration testing and regression analysis, reducing manual reporting overhead.

Graduate Student Intern - Signal Processing & Automation May 2019 - Apr 2022
Nevada National Security Site *North Las Vegas, NV*
Mentors: Cleat Zeiler, Marylesa Howard, Daniel Champion

- Built **Python-based data science pipelines** for seismic signal analysis and event detection, enhancing model accuracy and data throughput.
- Designed algorithms for **data normalization and anomaly detection**, improving reliability of field measurements and operational decision-making.
- Applied statistical inference and time-series analysis to assess performance metrics and optimize data-driven signal reconstruction.

EDUCATION

PhD, Mathematics, Texas A&M University, College Station, TX — Aug 2019 - Dec 2025
Thesis: A Robust Lagrangian Framework for Compressible Flow & Hyperelasticity
Emphasis: Finite Element Analysis, Systems Verification, Computation Fluid Dynamics, Partial Differential Equations

Bachelor of Science, Mathematics (Computer Science minor), — Jan 2015 - Apr 2019
Brigham Young University - Idaho, Rexburg, ID

SKILLS

- **Data Science & Analytics:** Python (NumPy, Pandas, SciPy), MATLAB, SQL, Power BI, Tableau, TensorFlow
- **Modeling & Forecasting:** Predictive Modeling, Regression, Time-Series Analysis, Cost Modeling, Data Normalization
- **Software & Tools:** Git/GitLab, Linux/Unix, CMake, Docker, LaTeX
- **Finance & Systems:** Cost Estimation, Statistical Analysis, Life-Cycle Cost Modeling, Risk Quantification
- **Communication:** Technical Writing, Executive Presentations, Cross-Disciplinary Collaboration

OUTREACH & SERVICE

Undergraduate Research Advisor
Texas A&M University — *College Station, TX*
- Guided an undergraduate research project on nonlinear elasticity for the Modeling and Simulation with PDEs summer school, supporting problem formulation, implementation, and presentation of results. (2024)
- Supervised an undergraduate research project on chemotaxis for the Directed Reading Program, providing one-on-one instruction, feedback, and research direction, culminating in an end of the semester presentation. (2022)

Volunteer
- Mathematics and Statistics Fair, Texas A&M University — Jan 2023
- **GED Prep Instructor**, B/CS Community Education Center, Bryan, TX — 2021-2022
- **Proctor**, High School Math Contest, Texas A&M University — Oct 2019

Eagle Scout — Apr 2012

LEADERSHIP

Organizer — Jul 2023
Mini-symposium on "Invariant-Domain Preserving Hydrodynamics: From Euler to Navier-Stokes"
17th U.S. National Congress on Computational Mechanics, Albuquerque, NM, USA

Organizer — Nov 2022
Mini-symposium on "High Order Methods for Computational Hydrodynamics"
5th Annual Meeting of the SIAM Texas-Louisiana Section, Houston, TX, USA

President, Vice President, Treasurer — 2019 – 2024
Society for Industrial and Applied Mathematics (SIAM) Graduate Student Chapter, Texas A&M University

LANGUAGES

English — Native Language
Portuguese — Intermediate Listener, Intermediate Speaker, Advanced Reader, Novice Writer