Grace Bergquist

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gracegb.github.io

Research Interests

Human-Computer Interaction (HCI), Human-Machine Teaming, Trustworthy Intelligent Systems, Mixed Reality (MR/AR/VR), Machine Learning.

Education

California Baptist University Riverside, CA
Bachelor of Science in Computer Science, Concentration in AI/ML Exp. April 2026
GPA: 3.97

Honors & Awards

- **DoD SMART Scholarship** 2024 – Present
  Full tuition and stipend scholarship awarded by the U.S. Department of Defense; requires highly competitive selection for post-graduate employment with the DoD.
- **Team Captain, NCAA Division I Water Polo** 2023 – 2025
  Selected as captain for three consecutive seasons while maintaining high academic standing.

Professional Experience

Student Intern (DoD SMART Scholar) Summer 2024, Summer 2025
Naval Surface Warfare Center Dahlgren Division (NSWCDD) Dahlgren, VA

- Completed SMART summer internships in 2024 and 2025; returning for Summer 2026.
- Collaborated with a software development team to refactor a large-scale, legacy C++ codebase, adding new features and modernizing system architecture.
- Utilized Git branching workflows, pull requests, and code reviews to ensure clean integration of features in an RDT&E environment.

Research Experience

Undergraduate Researcher September 2025 – Present
Project: Inverse FEA Tissue Elasticity Prediction California Baptist University
Mentors: Dr. Benjamin Sanders, Dr. Mark Gordon

- Contributing to an ongoing research effort exploring tissue elasticity prediction through Inverse FEA.
- Developing a Machine Learning pipeline to predict pelvic plate elasticities using PCA geometry features and chained regression models (RandomForest, XGBoost).

Student Researcher September 2025 – Present
Project: Subliminal Learning in LLMs via Distillation & LoRA California Baptist University

- Replicating subliminal learning research (Cloud et al.) to investigate behavioral trait transmission in Meta Llama 3 models via numeric-sequence distillation.
- Fine-tuning "teacher" models using Unsloth and LoRA on synthetic preference datasets generated via a custom Alpaca-style self-instruct pipeline.
- Developing a comprehensive evaluation harness to quantify bias transfer in "student" models trained on 10,000+ teacher-generated numeric sequences.

HPC Student Team Member September 2025 – Present
CBU AI/ML Lab High Performance Computing Team California Baptist University

- Investigating 3D workflows and digital twin technologies using NVIDIA Omniverse.

Publications

"Towards Radiology Software for Developing Regions to Promote Sustainability in Medical Decision Making." (Co-author). Accepted for publication in *Proceedings of the 54th Annual Conference of the Western Decision Sciences Institute (WDSI)*, Vancouver, BC, March 2026.

"Towards Sustainable Decision Making Over GIS: A Survey." (Co-author). Accepted for publication in *Proceedings of the 54th Annual Conference of the Western Decision Sciences Institute (WDSI)*, Vancouver, BC, March 2026.

Technical Skills

- **Languages:** C++, Python, Java
- **Machine Learning:** PyTorch, Hugging Face, Unsloth, Scikit-learn, Pandas, NumPy
- **Tools:** Docker, Git, Conda, OpenUSD, Ollama, Firebase, Linux, Figma, Adobe Creative Suite