

SUMMARY

PhD student in Computer Science at the University of Utah with a B.S. in Applied Mathematics (Computing). Experienced in developing generative-AI tools, physics-based simulations, and LLM-driven applications. Research interests include deep learning, graph neural networks, and simulation methods with applications in computer graphics and scientific computing.

EDUCATION

University of Utah <i>Ph.D. Student, Computer Science</i>	Salt Lake City, UT <i>Aug. 2025 – Present</i>
University of California, Los Angeles <i>B.S. Applied Mathematics (Specialization in Computing)</i>	Los Angeles, CA <i>Sep. 2021 – Jun. 2025</i>

EXPERIENCE

University of Utah <i>Research Assistant (PhD Student)</i> <ul style="list-style-type: none">◦ Neural Knitting Pipelines: Developing neural optimization pipelines to minimize carriage passes in industrial knitting machines, cutting cycle time and energy use.◦ Differentiable Yarn Mechanics: Building differentiable simulators for yarn-level mechanics to enable gradient-based learning of fabric properties.	Salt Lake City, UT <i>Aug 2025 – Present</i>
UCLA Department of Mathematics <i>Undergraduate Researcher</i> <ul style="list-style-type: none">◦ AGEOABM Epidemic Simulator: Designed a configurable SEIIR agent-based model using OpenStreetMap data, <i>osmnx</i>, and <i>networkx</i> to simulate city-scale disease spread.◦ Scalable Urban Networks: Implemented a highly concurrent Python architecture (Docker-based) enabling real-time simulations on metropolitan graphs.	Los Angeles, CA <i>Jan 2025 – Aug 2025</i>
UCLA PIC Lab <i>Lab Assistant</i> <ul style="list-style-type: none">◦ Student Mentorship: Guided 100+ students in Python, C++, and Java; improved assignment completion rates by 8% through targeted debugging and conceptual reinforcement.◦ Curriculum Design: Co-developed programming assignments and refined ML exercises to align with departmental learning objectives.	Los Angeles, CA <i>Sep 2024 – Jun 2025</i>
Knight Cancer Institute & HHMI Janelia <i>Applied Mathematics Intern</i> <ul style="list-style-type: none">◦ SOFI Imaging Algorithms: Analyzed temporal blinking dye patterns to enhance SOFI super-resolution pipelines; implemented algorithms in Python/MATLAB.◦ Synthetic Data Generation: Created synthetic dye datasets to benchmark imaging fidelity and informed protocol improvements for live-cell microscopy.	Portland, OR / Ashburn, VA <i>Jun 2024 – Aug 2024</i>

PROJECTS

PromptCraft Chrome Extension: LLM-powered tool that rewrites prompts with one click; modern popup UI, secure token storage, and modular style system.
GUIPySOFI: Cross-platform Qt/PySide GUI for PySOFI; configurable order, frame count, and correlation methods with real-time visualization and export.
OpenRAGSearch: Open-source Python toolkit implementing a modular Retrieval-Augmented Generation pipeline: PDF ingestion & chunking, vector embeddings (ChromaDB), LangChain graph integration, and local LLM support for interactive research-paper QA.

PROGRAMMING SKILLS

Languages: Python, C++, Java, C#, SQL, MATLAB, JavaScript/TypeScript, HTML/CSS, \LaTeX
Technologies: PyTorch, NumPy/Pandas, Numba, Scikit-Learn, Docker, Git/GitHub, LangChain, RAG