

Daniel Johnson

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PROFESSIONAL EXPERIENCE

Post-Master's Researcher

June 2024 – Present

Los Alamos National Laboratory

Remote (KS)

- Collaborate with code teams to improve continuous integration (CI) and continuous deployment (CD) infrastructure
- Enhance and modernize build-system infrastructure for a large-scale multi-physics application, improving portability
- Contribute to academic papers on high-performance computing (HPC) and DevOps aimed at top conference venues

Graduate Intern

May 2023 – June 2024

Los Alamos National Laboratory

Los Alamos, NM & Remote (KS)

- Optimized and generalized a CI/CD containerization pipeline for a large-scale multi-physics application
- Contributed software engineering design and development to the open-source LANL Data Science Infrastructure project
- Attended informative lectures on HPC software engineering, applied machine learning, and computational physics

Graduate Research Assistant & Graduate Teaching Assistant

August 2022 – May 2024

University of Kansas School of Engineering

Lawrence, KS

- Conducted research in the intersection of HPC, applied linear algebra, fault tolerance, and machine learning
- Published a paper on selective soft-error protection for sparse iterative linear system solvers in IEEE SBAC-PAD 2024
- Gave lectures on deep learning for Graduate Data Science and intermediate programming topics for Programming 2
- Was awarded the Paul F. Huebner Memorial Award for excellence in teaching

Software Development Intern

May 2021 – August 2022

Paycom

Oklahoma City, OK & Remote (KS)

- Developed a PHP tool that parses 100,000+ source files to upload documentation to an internal site using a REST API
- Developed an web application using JavaScript, React, C#, and MySQL to monitor a distributed photo OCR system
- Presented projects to the CIO and other development management to show usage and monetary value

EDUCATION

University of Kansas

Lawrence, Kansas

Master of Science in Computer Science

May 2024

- GPA: **4.00/4.00** | Thesis Title: *Probability-Aware Selective Protection for Sparse Iterative Solvers*

University of Kansas

Lawrence, Kansas

Bachelor of Science in Computer Science

May 2022

- GPA: **3.74/4.00** | Upsilon Pi Epsilon Honors Society (Top 30% of Class) | Niehaus Award for Best Capstone

LEADERSHIP EXPERIENCE

Vice President and Co-Founder

February 2021 – May 2024

KU Artificial Intelligence Organization

Lawrence, KS

- Managed and worked on team-oriented projects using applied artificial intelligence, ran weekly meetings, helped with organization funding and campus relations, and presented informative workshops on the fields of AI and ML

PROJECTS

MatProp | *Python, NumPy*

- Compact backpropagation engine and neural network framework that provides a PyTorch-like interface for defining and training neural networks using autograd-supported matrix operations
- Thoroughly tested against PyTorch to ensure that its calculations of values and gradients are correct

Glimmer | *Go*

- A tree-walk-interpreted programming language with a fully functional REPL, first class functions, static type checking, arrays, dictionaries, builtin functions for printing and data structure manipulation, conditionals, loops, and more
- Tested extensively to ensure correctness, achieving a 95%+ code coverage

TECHNICAL SKILLS

Programming Languages: Python, Bash, C, C++, Go, Rust, Julia, MATLAB, JavaScript, C#, Java, PHP, SQL

Tools/Libraries: Git, Gitlab CI/CD, Docker, Charliecloud, CMake, Spack, MPI, CUDA, NumPy, Pandas, PyTorch, Tensorflow