DAVID KRASOWSKA

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SUMMARY

David Krasowska is a Ph.D. student at Northwestern University, advised by Dr. Peter Dinda. His research journey began during his undergraduate studies at Clemson University. He collaborated with Argonne National Laboratory to explore lossy compression for optimizations in HPC scientific applications. This research has led to publications and awards. He received the DOE Computational Science Graduate Fellowship to fund his graduate studies. Currently, David is exploring performance portability for data centric architectures. He is working on Legion with Dr. Pat McCormick at Los Alamos National Laboratory.

EXPERIERENCE

Research Aide, Argonne National Laboratory ***June 2022 – June 2023***

- Continuation of undergraduate research work at Clemson.
- Expansion to 3D datasets and black-box regression model (IJHPCA).
- Best ACM SRC Poster at SC ‘22 for undergraduates.
- Contributed to Libpressio, an Argonne library for compression.

High Performance Computing Creative Inquiry, Clemson University ***June 2021 – December 2022***

- Best poster at Indy Student Cluster Competition at SC ‘22.
- Student Cluster Competition at SC ‘21.
- Collaboration with Dell and Intel to configure a pareto optimal performance (wattage) cluster.
- Set up a distributed cluster with package managers, applications, and benchmarks.

Undergraduate Student Researcher, Clemson University ***May 2021 – May 2022***

- Lossy compression research with Argonne National Laboratory and Clemson University FTHPC using the Palmetto Cluster.
- Analyzing statistical correlations within scientific 2D datasets in relation to compression performance.
- Publication at DRBSD-7 held during SC ‘21.

PEER-REVIEWED PUBLICATIONS

A Lightweight, Effective Compressibility Estimation Method for Error-bounded Lossy Compression

A. Ganguli, R. Underwood, J. Bessac, **D. Krasowska**, J. C. Calhoun, S. Di, and F. Cappello. IEEE International Conference on Cluster Computing (CLUSTER). doi:10.1109/CLUSTER52292.2023.00028

Black-Box Statistical Prediction of Lossy Compression Ratios for Scientific Data

R. Underwood, J. Bessac, **D. Krasowska**, J. C. Calhoun, S. Di, and F. Cappello. The International Journal of High Performance Computing Applications (IJHPCA). doi:10.1177/10943420231179417

Exploring Lossy Compressibility through Statistical Correlations of Scientific Datasets

D. Krasowska, J. Bessac, R. Underwood, J. C. Calhoun, S. Di, and F. Cappello. 7th International Workshop on Data Analysis and Reduction for Big Scientific Data (DRBSD-7). doi:10.1109/DRBSD754563.2021.00011

AWARDS

DOE Computational Science Graduate Fellowship Recipient ‘23

First Place for ACM Undergraduate Student Research Competition at Supercomputing '22

Best Poster IndySCC22 at Supercomputing '22

EDUCATION

Northwestern University, Evanston, IL
Ph.D. Student in Computer Science, 2023 - Current

Clemson University, Clemson, SC
B.S. in Computer Engineering, GPA 3.7/4.0, 2019 – 2022

TECHNICAL SKILLS

Top Languages:	C, C++, Python
Other Languages:	VHDL, MATLAB, CUDA, MPI
Skills:	LLVM, RISC-V, Databases