Megan Hickman Fulp

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Education

Bachelor of Science, Computer Science (Honors) (ABET Accredited), Minor in Mathematics August 2015 - May 2019

Coastal Carolina University, Conway, South Carolina
Cumulative GPA: 3.950

Master of Science, Computer Engineering (ABET Accredited), August 2019 - Present

Clemson University, Clemson, South Carolina
Cumulative GPA: 4.0

Work Experience

RESEARCH FELLOW | Los Alamos National Laboratory | Los Alamos, NM | May 2020 - August 2020

- Accepted into the Data Science Summer School as part of the Los Alamos Summer Fellowship.
- Worked on sophisticated sampling algorithms for in situ data reduction.
- Investigated the development and implementation of algorithms that combine spatial and temporal sampling.
- Presented results at the end of the summer experience as part of the LANL symposium.

RESEARCH ASSISTANT | Clemson University | Clemson, SC | August 2019 - Present

- Explored energy profiles of various lossy compressors to analyze workflow, using RAPL and PAPI.
- Researched how to efficiently parallelize (via CUDA) the generation of frequency distributions to alleviate the Huffman Encoding bottleneck in the GPU implementation of the lossy compressor SZ.
- Investigated the development and implementation of in situ algorithms that combine spatial and temporal sampling to enable massive data reductions without losing important information.

RESEARCH ASSISTANT | Los Alamos National Laboratory | Los Alamos, NM | August 2017 - August 2019

- Conducted data analysis research on various types of data sources from High Performance Computers.
- Implemented an array of data analytic tools including R, Python, ElasticSearch, and Apache Spark.
- Engaged in weekly team progress meetings to discuss findings.
- Participated in research on-site during the summer season and virtually year-round.

Awards, Activities & Affiliations

GAANN Fellowship: Clemson University, Holcombe Dept. of Electrical and Computer Engineering | Jan 2020
Federal grant from the US Department of Education via the Graduate Assistance in Areas of National Need.

Outstanding Student Award: Coastal Carolina University, Dept. of Science | May 2019
Computer Science - Awarded to one student per major for academic achievements and co-curricular activities.

Honors Fellowship: Coastal Carolina University, Dept. of Honors | 2015 - May 2019
Organized orientation, mentored students, completed research.

Ekklesia Christian Church: Conway, South Carolina | 2016 - Present
Website Development Leader - Volunteer Position, http://ekklesiachristianchurch.com/

Technical Knowledge

Programming Languages	R | Python | C | CUDA | PySpark | Java | OpenCL | SQL | HTML
Software	ElasticSearch | Kibana | MATLAB | Jupyter Notebooks | RStudio

Publications

(3) **Hickman Fulp, M.**, Biswas, A., and Calhoun, J. Combining Spatial and Temporal Properties for Improvements in Data Reduction. In Proceedings of the International Workshop on Big Data Reduction, Accepted, IEEE, 2020.

(2) Tian, Jiannan, Sheng Di, Kai Zhao, Cody Rivera, **Megan Hickman Fulp**, Robert Underwood, Sian Jin et al. *"CuSZ: An efficient gpu-based error-bounded lossy compression framework for scientific data."* In Proceedings of the ACM International Conference on Parallel Architectures and Compilation Techniques, pp. 3-15. 2020.
https://dl.acm.org/doi/abs/10.1145/3410463.3414624

(1) **Hickman, Megan,** Dakota Fulp, Elisabeth Baseman, Sean Blanchard, Hugh Greenberg, William Jones, and Nathan DeBardeleben. "Enhancing HPC system log analysis by identifying message origin in source code." In *2018 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)*, pp. 100-105. IEEE, 2018.
https://ieeexplore.ieee.org/document/8539171