MEGAN HICKMAN FULP

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Education

Ph.D., Computer Engineering..... January 2022 - Present
Clemson University, Clemson, South Carolina Cumulative GPA: 3.99
Focus in Computer Systems Architecture
Thesis Topic in Data Reduction Techniques

Master of Science, Computer Engineering..... August 2019 - December 2021
Clemson University, Clemson, South Carolina Cumulative GPA: 3.99

Bachelor of Science, Computer Science (Honors).....August 2015 - May 2019
Minor in Applied Mathematics
Coastal Carolina University, Conway, South Carolina Cumulative GPA: 3.95

High School Diploma.....August 2011 - May 2015
Ashley Ridge High School, Summerville, South Carolina Cumulative GPA: 3.876

Teaching Experience

Lecture Assistant | Clemson University..... August 2019 - Present
- Led lecture and discussion for several courses on topics including fault tolerance, compression, GPUs, FPGAs, and Ethics

Enrichment Co-Op Lead | Homeschool Hub..... 2022
- Directed physical science learning and activities for high school students

Lead Organizer and Presenter | Coastal Carolina University ACM Chapter..... 2018 - 2019
- Organized and led presentations on various computer science topics (listed below)

Tutor | Coastal Carolina University Dept. of Science..... August 2016 - May 2017
- Tutored students in computer science and mathematics topics

Teaching Assistant | Coastal Carolina University Dept. of Science..... 2017
- Assisted instructor in helping students in class and grading Java assignments

Mentoring Experience

Small-Group Leader | Ekklesia Christian Church..... 2022 - Present
- Fostered discussion amongst middle school students over life situations

Undergraduate Student Mentor | Clemson University.....2021 - Present
- Advised current undergraduate students in developing research skills

Graduate Student Mentor | Clemson University.....2020
- Guided first year graduate students through common pitfalls

Women in STEM Mentor | Coastal Carolina University Women in STEM.....2019
- Participated in small group activities with other female STEM students

Research Experience

Research Assistant | Clemson University..... August 2019 - Present
- Efficiently parallelized various algorithms within the data reduction pipeline
- Investigated capabilities and drawbacks of varying data reduction algorithms
- Implemented several data reduction pipelines involving compression and sampling

Research Assistant | Los Alamos National Laboratory (LANL)..... Summer 2021
- Conducted research as part of the Data Science Summer School
- Engaged in weekly team progress meetings to discuss findings
- Presented work at the end of the summer symposium

- Participated in research on-site during the summer season and virtually year-round

Research Assistant | LANL Summer Research Fellowship..... Summer 2020
- Conducted research as part of the Data Science Summer School
- Engaged in weekly team progress meetings to discuss findings
- Participated in research on-site during the summer season and virtually year-round

Research Assistant | New Mexico Consortium; LANL..... Summers 2017 - 2019
- Conduct data analysis research on various types of data from supercomputers
- Learned an array of data analytic tools, including R and Python
- Engaged in weekly team progress meetings to discuss findings
- Utilized analytical skills in assessing findings and researching ways to model data

Malware Analyst | Wetstone Technologies..... August 2016 - July 2017
- Researched various types of malware and obtained samples or MD5 hashes to include in a repository
- Located potentially malicious applications and examined their contents
- Wrote programs help automate processes of taking apart malware and to prevent duplicates of malware in the repository
- Disassemble various tools such as keyloggers, toolkits, and spyware to determine their uniqueness

Extracurricular Involvement

Director of Technology | Ekklesia Christian Church..... January 2022 - Present
- Lead Website and App Developer
- Head of technological needs

Supercomputing Conference Student Volunteer..... 2019, 2020
- Supported hosts in running a smooth conference

ACM Student Chapter | Coastal Carolina University.....August 2017 - May 2019
- Founder, Vice Chair (`17 - `18)
- Chair (`18 - `19)

Upsilon Pi Epsilon | Coastal Carolina University..... FA 2019
- Computer science honor society

Setup Crew | Ekklesia Christian Church..... SP 2016 - SP 2018

Lead Website Developer | Ekklesia Christian Church..... FA 2018 - SP 2022

CCU Women in STEM Fellowship | Coastal Carolina University SP 2018 - FA 2019
- Women in Sciences Fellowship; Mentor

Honors Fellowship | Coastal Carolina University..... FA 2015 - SP 2019
- Orientation lead
- Mentor
- Researcher

Women in Computing | Coastal Carolina University..... FA 2016 - SP 2017
- Member

Numbers & Bytes | Coastal Carolina University.....FA 2015 - SP 2016
- Computer Science and Technology Club, Member

Honors Program Activities Club | Coastal Carolina University..... FA 2015 - SP 2016

SC Young Adult Book Award Readers | Ashley Ridge High School..... FA 2011 - SP 2015
- Member (`11-`13)
- Vice-President (`13-`15)

Mu Alpha Theta | Ashley Ridge High School..... FA 2013 - SP 2015
- Math Honor Society; Member

National Honor Society | Ashley Ridge High School..... FA 2014 - SP 2015

English Honor Society | Ashley Ridge High School..... FA 2012 - SP 2013

Tutor | Ashley Ridge High School.....FA 2011 - SP 2015
- Assisted students with concepts in English, Mathematics, & Digital Multimedia

Grants & Fellowships

GAANN Fellowship | Clemson University | US Department of Education.....2020 - Present
Federal grant via the Graduate Assistance in Areas of National Need
Research Grant | Clemson University | National Science Foundation.....2019 - 2020
LANL Summer Research Fellowship | Los Alamos National Laboratory..... Summer 2020
Honors Fellowship | Coastal Carolina University.....2015 - SP 2019
Palmetto Scholarship | Coastal Carolina University.....FA 2015 - SP 2019
President's Scholar Award | Coastal Carolina University.....FA 2015 - SP 2019
Palmetto Fellows | South Carolina.....FA 2015 - SP 2019
Pell Grant | South Carolina.....FA 2015 - SP 2019

Honors & Awards

Outstanding Student Award | Coastal Carolina University | *Computer Science* May 2019
Awarded to one student per major for academic achievements and activities
Upsilon Pi Epsilon | Coastal Carolina University Inducted in 2017
Computer Science Honor Society
President's Honor List | Coastal Carolina University FA 2015 - SP 2017, FA 2018
Dean's Honor List | Coastal Carolina University FA 2017 - SP 2018

Technical Knowledge

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

Publications

(5) **Hickman Fulp, Megan**, et al. "Accelerated Dynamic Data Reduction Using Spatial and Temporal Properties" *The International Journal of High Performance Computing Applications* (2022): In Submission.
(4) **Hickman Fulp, Megan**, "Dynamic Reduction of Scientific Data Through Spatiotemporal Properties" (2021). *All Theses*. 3656. https://tigerprints.clemson.edu/all_theses/3656
(3) **Hickman Fulp, Megan**, et al. "Combining Spatial and Temporal Properties for Improvements in Data Reduction." *2020 IEEE International Conference on Big Data (Big Data)*. IEEE, 2020. https://ieeexplore.ieee.org/document/9378457
(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

Trainings

Certificate in Engineering and Science Education | Clemson University 2022 - Present

- Gained formal experience in the education process in STEM disciplines

Conference Presentations

(5) **Megan Hickman Fulp**. "Utilizing Temporal Similarities for Improved Data Reduction", International Workshop on Big Data Reduction, Virtual. December 2020. Mentors: Ayan Biswas; Jon Calhoun
(4) **Megan Hickman Fulp**. "Utilizing Temporal Similarities for Improved Data Reduction", DRBSD-6, Atlanta, GA - Virtual. November 2020. Mentors: Ayan Biswas; Jon Calhoun
(3) **Megan Hickman Fulp**. "Utilizing Temporal Similarities for Improved Data Reduction", Los Alamos National Laboratory Symposium 2020, Los Alamos, NM - Virtual. August 2020. Mentors: Ayan Biswas; Jon Calhoun
(2) **Megan Hickman Fulp** and Dakota Fulp. "Parallel Integration and Other Applications of SaNSA in HPC State Analysis", SC '19, Denver, CO. November 2019. Mentors: Nathan DeBardeleben; William M. Jones
(1) **Megan Hickman Fulp** and Dakota Fulp. "Improving SaNSA: Spark Integration and Anomaly Detection in HPC State Analysis", USRC Summer Research Symposium, Los Alamos, NM. July 2019. Mentors: Nathan DeBardeleben; William M. Jones

Other Presentations

(16) "Exploring the Feasibility of Sample Packing Utilizing a Regression-Based Compression Prediction Model", **ECE 8930,** November 30, 2021.
(15) "Optimizing Spatial-Temporal Hybrid Data Sampling and Reconstruction using CUDA", **ECE 8780,** ECE Department, Clemson University, April 27, 2021. Discussed: Improving throughput of modern sampling algorithms with a GPU, using CUDA.
(14) "Data Sampling Technique Accelerated with FPGA", **ECE 8790,** ECE Department, Clemson University, April 29, 2020. Discussed: Improving throughput of modern sampling algorithms with an FPGA.
(13) "Resume Workshop", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, February 21, 2019. Discussed: How to make your resume look more professional.
(12) "How to 3D Print", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, February 14, 2019. Discussed: How to make a 3D model in Tinkercad online software and how 3D printers work.
(11) "Online Privacy", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, February 7, 2019. Discussed: How to protect your information online.
(10) "WalkerBot", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, April 10, 2018. Discussed: How robots can move, including a homemade robot that can "walk" on legs, and Vector, a commercial home robot, who uses treads to move.
(9) "How to use Slack", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, September 6, 2018.
(8) "Useless Box - Upgraded", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, August 30, 2018. Discussed: How to construct and code a useless box, upgraded since the first presentation.

(7) "LED Cubes", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, April 10, 2018. Tutorial: How to make an LED cube lamp, including topics in soldering and resistors.
(6) "LED Goggles", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, March 20, 2018. Discussed: How to make a pair of "infinity goggles" using LEDs.
(5) "Supercomputing", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, January 23, 2018. Discussed: Internship at Los Alamos National Laboratory and topics learned at SC 17 conference.
(4) "Making a Turret", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, October 12, 2017. Discussed: "Jerry," a motion tracking robot built with PIR and PING sensors.
(3) "Motion Sensors", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, September 28, 2017. Discussed: The differences between types of motion sensors and how they work.
(2) "How to Solder", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, September 14, 2017.
(1) "Useless Box Tutorial", **CCU ACM Student Chapter Meeting**, CS Department, Coastal Carolina University, August 31, 2017.

Posters

(3) **Megan Hickman Fulp**, Nathan DeBardeleben, William M. Jones. "HPC State Anomaly Detection and Visualization with SaNSA." Poster presented at: USRC Summer Research Symposium. July 31, 2019; Los Alamos, NM.
(2) **Megan Hickman Fulp**, Nathan DeBardeleben, William M. Jones. "HPC State Anomaly Detection and Visualization with SaNSA." Poster presented at: LANL HPC Showcase. August 1, 2019; Los Alamos, NM.
(1) **Megan Hickman**, Nathan DeBardeleben, William M. Jones. "Enhancing HPC System Log Analysis by Identifying Message Origin in Source Code." Poster presented at: USRC Summer Research Symposium. August 6, 2018; Los Alamos, NM.

Memberships

IEEE Student Member 2020 - Present