EMILY GARCEAU

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Education

North Carolina State University | 2023-Present
Doctor of Philosophy in Computer Engineering
Goodnight Doctoral Fellowship — Provost's Doctoral Fellowship
University Graduate Fellowship — Graduate Merit Award

Clemson University Honors College | 2019-2023
Bachelor of Science in Computer Engineering — GPA: 4.0
Rhodes Most Outstanding Senior in Computer Engineering — Faculty Scholars Award
President's List 2019-2023 — Palmetto Fellows Scholarship

Research

iBionicS Laboratory | January 2024-Present
Supervisor: Dr. Alper Bozkurt at North Carolina State University
Perform research on data analytics using artificial intelligence and machine learning
- Fusion of multimodal sensor data, identification of outliers, and feature extraction
- Parallel computing
- Python, R, and MATLAB, including their respective machine learning and image processing libraries

Tracking Finger and Hand Motion Related to Eating | January-May 2023
Supervisor: Dr. Adam Hoover at Clemson University
Researched different forms of wearable technology to detect eating behavior
- Custom development programming (GitHub) for obtaining sensor measurements from a smart ring to support finger-tracking research

Data Compression - NSF REU | January-February 2023
Supervisor: Dr. Jon Calhoun at Clemson University
Researched data compression methods as a National Science Foundation REU student
- Improved current state-of-the-art lossy and lossless data compression by adding logic to dynamically manage compressed data
- Evaluated data management runtime on a diverse set of proxy application and production-level applications with varying memory requirements, communication computation ratios, communication patterns, and data access patterns

Work Experience

Cadence Design Systems | WFO Application Engineer Intern
San Jose, CA | May 2023-August 2023
- Named as one of National Intern Day's Top 100 Interns
- Collaborated with cross-functional teams to develop and execute comprehensive test plans for advanced semiconductor designs

- Designed and implemented complex SystemVerilog testbenches using Cadence's Xcelium simulation tools
- Led formal verification efforts, ensuring coverage of design specifications and reducing the risk of functional errors
- Utilized Universal Verification Methodology (UVM) to improve verification efficiency and maintainability
- Analyzed simulation results and debugged issues, consistently meeting project milestones and deadlines
- Documented verification processes, test results, and issues to facilitate knowledge sharing and project continuity
- Presented two formal design reviews to management evaluating the progress, quality, and correctness of design verification efforts

Delta Air Lines | Simulator Engineering Co-Op
Atlanta, GA | January 2021-July 2022
- Edited and debugged C and FORTRAN programs implemented using real-time simulation on Unix-based platforms
- Ensured consistent training experience across simulator fleet by altering code on different host computers and operating systems
- Improved software efficiency to optimize simulator resources and increase simulator reliability
- Communicated with departments across company and government agencies to secure documentation for simulator modifications
- Researched and interpreted aircraft wiring schematics to debug simulation software and maintain data integrity
- Crafted technical reports detailing coded software modifications
- Partnered with pilots and instructors to identify and resolve simulator discrepancies to optimize pilot training
- Successfully on-boarded, trained, and mentored a new co-op student
- Initiated and scheduled monthly meetings with members of the engineering team and leadership
- Created a collaborative cross-divisional partnership between two engineering departments
- Worked with engineers from other companies to troubleshoot and implement software corrections

Clemson University | Undergraduate Teaching Assistant
Clemson, SC | August 2020-December 2020
- Aided general engineering professor by answering questions and explaining material in class of 40+ students
- Tutored student individuals and groups using collaborative methods to provide support and strengthen understanding

Leadership

Eta Kappa Nu (IEEE-HKN) - Vice President
Clemson, SC | 2022-2023
Electrical and Computer Engineering Honor Society for top 1/5 of sophomores, 1/4 of juniors, and 1/3 of seniors at Clemson University

- Organized annual career fair for 100+ Electrical and Computer Engineering students and 12 companies totaling 20+ representatives
- Planned and led monthly meetings for 40+ members and weekly meetings for executive members
- Maintained attendance records and continuing requirements for each member
- Led department-wide Operation Christmas Child donation event
- Designed and distributed exclusive HKN Zeta Iota t-shirts

CECAS Undergraduate Student Advisory Board - ECE Representative
Clemson, SC | 2022-2023
College of Engineering, Computing, and Applied Sciences at Clemson University
- Created a partnership between the college and Tigertown Graphics to design and sell custom CECAS t-shirts individualized for each major
- Developed outreach events for students in the college to enhance the undergraduate experience
- Provided feedback to the Dean's office on relevant issues to help guide or influence college-level decisions
- Attended bimonthly board meetings and represent the ECE department student body
- Communicated information about ECE department activities, policies, and processes with board members from other departments
- Distributed information to the ECE department's student body

Honors

- **Goodnight Doctoral Fellowship** - awarded to 30 Ph.D. students each year studying STEM or education at North Carolina State University
- **Rhodes Most Outstanding Senior in Computer Engineering** for the 2022-2023 academic year in the Holcombe Department of Electrical and Computer Engineering at Clemson University
- **Faculty Scholarship Award** at Clemson University upon 2023 graduation with a 4.0 GPA
- **Eta Kappa Nu Zeta Iota** - Electrical and Computer Engineering Honor Society at Clemson University for top 1/5 of sophomores, 1/4 of juniors, and 1/3 of seniors
- Appointed to the **CECAS Undergraduate Student Advisory Board** by the chair and faculty advisor of the Holcombe Department of Electrical and Computer Engineering to serve as one of three ECE student representatives
- Invited to attend Clemson University's annual **ECE External Board of Advocates** 2022 meeting as one of five ECE students to provide undergraduate feedback to industry leaders
- **President's List** at Clemson University Fall 2019-Spring 2023

Technical Skills

C/C++ ●●●●○	Logisim ●●●●○	Digital Works ●●●○○
Python ●●●●○	LTspice ●●●●○	R ●●●○○
FORTRAN ●●●●○	Verilog ●●●●○	Prolog ●●●○○
MATLAB ●●●●○	SystemVerilog ●●●●○	OCaml ●●●○○
VS Code ●●●●○	VHDL ●●●○○	LaTeX ●●●○○
GDB ●●●●○	UVM ●●●○○	HTML ●●●○○
Unix ●●●●○	Xcelium ●●●○○	CSS ●●●○○
JavaScript ●●○○○		

Relevant Courses

Neural Networks	Electric Circuits	Digital Computer Design
Detection & Estimation Theory	Electronics	Integrated System Design
Pattern Recognition	Logic & Computing Devices	Linear Control Systems
Computer Vision	Computer Organization	Computer Ethics
R/Python	Signal Processing	Linear Algebra
Data Science	Microcontroller Interfacing	Discrete Mathematics
Embedded Computing	Computer Networking	Senior Design
Random Signal Analysis	Operating Systems	

Professional Skills

Technical Writing	Project Management
Organizing Meetings	Research & Analytics
Mentoring/Tutoring	Leading Teams