Makayla Moster

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Research Interests

Computer Science Education, Software Engineering Education, Online Learning, CS/SE Educational Communities, Informal Learning Communities

Education

Ph.D. Candidate in Computer Science — August 2019 – Present
Clemson University — Clemson, SC
Dissertation: "Learning Through Online Participation: From Breakout Rooms to Discord"
Advisor: Dr. Paige Rodeghero

Graduate Certificate, Engineering and Science Education — December 2022
Clemson University — Clemson, SC

M.S. in Computer Science — May 2021
Clemson University — Clemson, SC

B.S. Honors in Computer Science, Digital Arts concentration — May 2019
University of North Carolina Wilmington — Wilmington, NC
Magna Cum Laude — GPA: 3.886
Thesis: "Conforming Realistic, Procedural Tree Models to User-Drawn Shapes"
Advisor: Dr. Brittany Morago

Research Experience

Research Assistant, HFSE Lab — May 2020 – Present
Advisor: Dr. Paige Rodeghero — Clemson University
Studying how communication tools prepare collegiate software engineering students for roles in industry.

Researcher, EdASE Coding Camp for Autism — January 2021 – Present
EdASE Directors: Drs. Paige Rodeghero, Andrew Begel, & D. Matthew Boyer
Examining how computer coding camps for autism impact students' self-efficacy and communication skills.

Research Assistant, Visual Computing Lab — August 2019 – May 2020
Advisor: Dr. Daljit Singh Dhillon — Clemson University
Developed code to model reaction-diffusion systems over arbitrary meshes.

Teaching Experience

Graduate Teaching Assistant August 2019 – Present
School of Computing Clemson University

CPSC 8740: AI-Receptive Software Development 2024
Aided in Coursera course creation by developing the course outline, lecture topics, and assignments.

Spring 2024: Aided in course development

CPSC 9500: Graduate Seminar 2023
Conducted speaker searches, developed course materials, and organized/lead seminar sessions for a departmental, graduate-level seminar course.
Hosted by SoCGSA during my time as president.

Spring 2023: 6 graduate students

CPSC 4910/4911: Seminar in Professional Issues II 2021 – 2023
Conducted lab lectures, provided aid, and was scrum master for multiple sections of student software engineering teams.

Spring 2021: 87 undergraduate students (4 sections)
Fall 2021: 60 undergraduate students (3 sections)
Spring 2022: 72 undergraduate students (3 sections)
Fall 2022 [Lead GTA]: 77 undergraduate students (3 sections)
Spring 2023 [Lead GTA]: 94 undergraduate students (6 sections)

CPSC 1010/1011: Computer Science I 2019, 2020
Conducted lab lectures, provided aid and office hours, and graded weekly introductory programming assignments for 3 sections of students.

Fall 2019: 65 undergraduate students (3 sections)
Fall 2020: 55 undergraduate students (3 sections)

Instructor, EdASE Coding Camp for Autism 2021, 2022, 2023, 2024
EdASE Directors: Drs. Paige Rodeghero, Andrew Begel, & D. Matthew Boyer
Developed course content surrounding 2D game design using Godot Engine (2021, 2022) and Scratch (2023, 2024).
Created lessons on pixel art and led camp instruction for multiple days.
Liaison between parents and instructors for the 2022 camp.

Summer 2021: 14 campers
Summer 2022: 15 campers
Summer 2023: 20 campers
Summer 2024: TBD

Instructor, Engineering Expectations June 2018 – August 2019
Summer & Weekend Camps University of North Carolina Wilmington
Taught children how to code in HTML/CSS, Python, Java, and Scratch in several week-long and weekend computer science camps.

approx. 20 campers/camp

Publications

Journal Articles

2023 J.1 ***Moster, M.**, *Kokinda, E., Rodeghero, P., McNeese, N. "Both Sides of the Story: Changing the "Pre-existing Culture of Dread" Surrounding Student Teamwork in Breakout Rooms", in Proc. of the ACM on Human Computer Interaction, 7, CSCW1, Article 30 (April 2023), 33 pages.

* denotes co-first authorship

Peer-Reviewed Conference Papers

2024 C.10 Kokinda, E., **Moster, M.**, Rodeghero, P., Boyer, D. M. "Informal Learning Opportunities - Neurodiversity, Self-Efficacy, and Motivation for Programming Interest", presented at the 16th International Conference on Computer Supported Education (CSEDU '24), Angers, France, May 2-4, 2024.

C.9 **Moster, M.**, Boyer, D. M., Rodeghero, P. "WIP: Exploring how an Unofficial Discord Server Supports Undergraduate Learning in Computer Science", presented at 2024 ASEE Annual Conference & Exposition, Portland, Oregon, USA, June 23-26, 2024.

C.8 Kokinda, E., **Moster, M.**, Rodeghero, P., Boyer, D. M. "Compiling Resilience: A Study on First-Generation Women Pursuing Computing Degrees", presented at 2024 ASEE Annual Conference & Exposition, Portland, Oregon, USA, June 23-26, 2024.

C.7 **Moster, M.**, Kokinda, E., Boyer, D. M., Rodeghero, P. "Experiences with Summer Camp Communication via Discord", in Proc. of the 46th IEEE/ACM International Conference on Software Engineering - Sofware Engineering Education and Training Track (ICSE SEET '24), Lisbon, Portugal, April 14-20, 2024.

2023 C.6 Kokinda, E., **Moster, M.**, Dominic, J., Rodeghero, P. "Under the Bridge: Trolling and the Challenges of Recruiting Software Developers for Empirical Research Studies", in Proc. of the 45th IEEE/ACM International Conference on Software Engineering - New Ideas and Emerging Results Track (ICSE NIER '23), Melbourne, Australia, May 17-19, 2023.

2022 C.5 **Moster, M.**, Chandra, A., Chu, C., Liu, W., Rodeghero, P. "In the Zone: An Analysis of the Music Practices of Remote Software Developers", in Proc. of the 2022 ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM '22), Helsinki, Finland, September 19-23, 2022.

C.4 **Moster, M.**, Kokinda, E., Re, M., Dominic, J., Lehmann, J., Begel, A., Rodeghero, P. "'Can You Help Me?' An Experience Report of Teamwork in a Game Coding Camp for Autistic High School Students", in Proc. of the 44th IEEE/ACM International Conference on Software Engineering - Software Engineering Education and Training Track (ICSE SEET '22), Pittsburgh, PA, USA, May 21-29, 2022.

2021 C.3 **Moster, M.**, Ford, D., Rodeghero, P. "'Is My Mic On?' Preparing SE Students for Collaborative Remote Work and Hybrid Team Communication", in Proc. of the 43rd IEEE/ACM International Conference on Software Engineering - Joint Software Engineering and Education Track (ICSE JSEET '21), Madrid, Spain, May 23-29, 2021.

C.2 Huff Jr, E. W., Boateng, K., **Moster, M.**, Rodeghero, P., Brinkley, J. "Exploring the Perspectives of Teachers of the Visually Impaired Regarding Accessible K12 Computing Education", in Proc. of the 51st Technical Symposium on Computer Science Education (SIGCSE '21), Toronto, Canada, March 13-20, 2021.

2020 C.1 Huff Jr, E. W., Boateng, K., **Moster, M.**, Rodeghero, P., Brinkley, J. "Examining the Work Experience of Programmers with Visual Impairments", in Proc. of the 36th International Conference on Software Maintenance and Evolution - New Ideas and Emerging Results Track (ICSME NIER '20), Adelaide, Australia, Sept. 27-Oct. 3, 2020.

Symposia and Workshop Papers

2022 SW.2 **Moster, M.** "Investigating Communication Tools in SE Capstone Courses", in Proc. of the 2022 ACM Conference on International Computing Education Research V.2 (ICER '22), Lugano and Virtual Event, Switzerland, August 7–11, 2022.

SW.1 **Moster, M.**, Begel, A., Boyer, D. M., Rodeghero, P. "A Longitudinal Study Exploring Autistic High Schoolers' Interests in CS", 4th Annual Autism at Work Research Workshop (AAWRW '22), Virtual, May 16-18, 2022.

Professional Memberships

ACM 2023 – Present
IEEE 2021 – Present
Upsilon Pi Epsilon 2018 – Present

Honors and Awards

Exceptionally Engaging Letters award (Letters for a Prescientist) 2021
Graduate Student Travel Grant (Clemson University GSG) 2020
Robert M. Geist III Fellowship in Computing (Clemson University) 2019
Dean's List (8 semesters, UNCW) 2015 – 2019

Service and Outreach

Invited Panelist — New Online MSCS Sneak Peek
Clemson University — June & July 2024

Session Moderator — ASEE Annual Conference & Exposition 2024
Portland, Oregon — June 2024

Judge — Clemson Tigertown Throwdown Robotics Competition
Clemson University — February 4, 2023

President — School of Computing Graduate Student Association
Clemson University — August 2022 – May 2024
SoCGSA is a student organization that represents and holds events for Clemson's School of Computing graduate students in Computer Science, Human-Centered Computing, Digital Production Arts, and Biomedical Data Science & Informatics graduate programs.
Conducted administrative duties, organization of events, and task delegation.

Invited Panelist — New Graduate Student & Postdoc Teaching Conference
Clemson University — August 2022

Student Volunteer — Carolinas Women In Computing Conference 2022
University of North Carolina Wilmington — April 2022

Hackathon Participant — CUhackit 2022
Clemson University — January 29-30, 2022

Student Volunteer — FormaliSE at ICSE 2021
Madrid, Spain (Virtual) — May 2021

Program Committee Member & Website Chair — SEmotion 2021
Madrid, Spain (Virtual) — May 2021
Deployed, edited, and kept website up-to-date before and during conference period.

Pen Pal, Letters to a Prescientist Program — August 2020 – May 2023
Corresponded through letters with an elementary school student each school year who is interested in learning more about STEM careers.
Received an **award for Exceptionally Engaging Letters** for the 2020-2021 school year.

President — Upsilon Pi Epsilon
University of North Carolina Wilmington — August 2018 – May 2019

Skills

Research Methods

Survey, Survey Design, Interview, Interview Design, Qualitative Analysis, Quantitative Analysis, Grounded Theory

Programming Languages

Python, C++, C, LaTeX, HTML/CSS

Tools

OpenGL, Maya, Git, GitHub, Adobe Photoshop, Adobe Illustrator, Adobe XD, MAXQDA, Azure DevOps, Qualtrics, Taguette