Brook Bowers

Visiting Assistant Professor at Berry College

Personal Statement

I constantly wrangle with how to label myself. Do I say I'm an instructor because of the position I'm applying for, a research scientist since that's what I'm currently studying, or am I a software developer eternally looking for new problems and solutions?

I prefer a cliché- I am a lifelong learner, a forever student seeking knowledge.

In turn, I bring this energy, curiosity, and passion for learning into my lessons and interactions. Students need a bit of fun in the classroom while building foundational programming skills that will carry them through a rapidly and constantly shifting technical world- I intend to facilitate that entertainment, inspiration, and glimpse into the world. I'm interested in investigating the intersections between what works in a lesson, students' motivations for engaging with a computer science curriculum, and the latest emerging technologies.

I enjoy ideas of strengthening the presence of esteemed organizations worldwide: helping found a Girls Who Code chapter, hosting Software Carpentry workshops, or raising awareness of Open Science efforts.

I want to help people get where they want to be: through a lesson, past an insidiously evasive bug, into a better state of mind, and to a more equitable and just world.

Education

Aug 2017 – Dec 2024 | **University of Georgia**
PhD in Computer Science

Aug 2010 – Dec 2013 | **Berry College**
BS in Computer Science

Work Experience

Jan 2025 – Ongoing | **Berry College – Rome, GA**
Visiting Assistant Professor

- Worked on 3 new course preps: CSC 120, 225, 345WI
- CSC 120 (Introduction to Program Design) is a well-developed course with a substantial amount of material to be responsible for. Lessons involve primarily a flipped classroom where students watch video content outside of class and work on writing code in the classroom.
- CSC 225 (Data Structures) is a course under revision. This course introduced students to big-letter analyses, proofs, and the eponymous data structures that are commonly used in computing. I explored a theory-focused approach while allowing students to choose how much they would engage with the practical programming side.
- CSC 345WI (Elements of Computing) is a difficult course. Students develop a computer from logic gates and develop everything up to a high-level language. Each of the topics covered could itself be a semester or career of exploration.

May 2019 – Dec 2024

University of Georgia – Athens, GA

Graduate Research Assistant

- Investigated the design of a research system that uses commercial virtual reality headsets to emulate augmented reality education systems. I investigated using this system to explore early computer science lessons.
- Investigated design and use of a research system that uses commercial smart tablets to facilitate shared whiteboard mentoring lessons. The goal is to have an instrumented system that reduces the friction in observational studies while being a functional instructional tool.
- Investigated design and implementation of affordable commercial immersive virtual reality headset-compatible writing peripherals to be used in an "off-the-shelf" manner and a study evaluating generated peripherals.
- Support for a multi-year cross-institutional study of undergraduate research involving survey design, delivery, response rate tracking, and response rate intervention.
- Support for an online conference and testimonial session in the form of streaming management using OBS, Zoom, and Twitch or YouTube streaming platforms.

Dec 2022 – Apr 2024

Girls Who Code – New York, NY (Remote)

Seasonal Hiring Interviewer

- Conducted remote video interviews screening Site Lead, Lead Instructor, and Teaching Assistant roles for Girls Who Code's 2023/2024 Summer Immersion Programs.
- The interviews evaluated mission alignment, classroom scenarios, teaching, and technical programming skills.
- Interview transcript and feedback were reported back to the hiring team for hiring decisions.

May 2022 – Aug 2022

Girls Who Code – New York, NY (Remote)

Virtual Classroom Lead

- Led teaching teams of 5 undergraduate TAs through Girls Who Code's Summer Immersion Program.
- The experience covered 3 two-week rounds of teaching 50+ high school students introductory web programming skills while helping them build connections with the wider women-in-tech community.
- Co-ordinated pacing of the curriculum and interfaced with corporate partners as they hosted virtual workshops and activities for the students to participate in.

Aug 2018 - May 2019

University of Georgia – Athens, GA

Lead Graduate Teaching Assistant

- Assisted with Introduction to Programming across 4-5 sections totaling 200+ students by managing a team of 3-4 other graduate students and a team of 5-6 undergraduate student peer tutors.
- Met with both teams weekly to train and normalize grading patterns, lab instruction, and office hours between class and lab sections.
- Refined auto-grader software that compiled and ran Java source-code, checked software behaviour, and provided grade feedback.
- Assisted in exam and exam rubric design. Scheduled and ran group grading sessions for exams.
- Proctored lab sessions involving some instruction/recap of material, introduction of assignments, and general help with assignments. Conducted office hours to facilitate out of classroom questions and learning.

Jan 2018 - May 2018

University of Georgia – Athens, GA

Graduate Research Assistant

- Assisted Dr. Tianming Liu in exploring new avenues of research in the use of eye-tracking technology, EEG headset technology, and body-tracking to design composite sensor systems for use HCI.

Aug 2017 - Dec 2017 | **University of Georgia – Athens, GA**
Graduate Teaching Assistant
- Assisted with Theory of Computation by grading assignments, holding office hours, and proctoring/grading exams.

Feb 2014 - Oct 2016 | **Amazon – Seattle, WA**
Software Development Engineer
- Ordering Storage space which maintained services pertaining to calculation aggregation and components of the purchase storage layer for the retail website. For each of our services owned we maintained at least 99.99% availability and low latency.
- Information Security team. This team was responsible for maintaining an internal website which provided capabilities for tracking security risks and security reviews across Amazon's thousands of internal/external services

Aug 2012 - Dec 2013 | **Berry College – Rome, GA**
Research Assistant
- Helped proctor class sessions.
- Offered office hours outside of class for peer mentoring/tutoring.
- Research exploring formal verification of the greedy solution to the change-making problem.

Aug 2010 - Dec 2012 | **Berry College – Rome, GA**
Student Network Technician
- Managed faculty/staff and student network and file permissions.
- Troubleshot a wide range of technical issues, from wireless/wired internet problems on campus to networked printer setup to issues with outlook calendars.

Jun 2011 - Aug 2011 | **SBC Systems – Atlanta, GA**
IT Contractor
- Routine computer maintenance involving user support, decommissioning old computers, and generating server status using PowerShell.
- Assisted users with T-SQL query design.
- Generated technical documentation about proprietary software platform and IT policies and procedures.

Honors

2019 | Outstanding Teaching Assistant Award

Publications

2021 | 1. **Bowers, B.** *et al. Comparing Virtual Constraints and a Physical Stylus for Planar Writing and Drawing in Virtual Reality* in *2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (2021), 220–225.

2020 | 2. **Bowers, B.**, Rukangu, A. & Johnsen, K. *Making it Simple: Expanding Access and Lowering Barriers to Novel Interaction Devices for Virtual and Augmented Reality* in *2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (2020), 1–6.

Certifications

2022 | Software Carpentry Instructor (https://carpentries.org)

Happy to provide additional information on request