

Alex Hicks

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CS Education PhD Student

GitHub: awhicks

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Research Interests: I am a fourth year PhD student broadly interested in computer science education, software testing, and teaching assistant experiences advised by Dr. Cliff Shaffer and Dr. Stephen Edwards. I work on providing better feedback to students as well as creating better office hour interactions for students and improving training for teaching assistants.

EDUCATION

Ph.D. in Computer Science , <i>Virginia Polytechnic Institute and State University (4.0/4.0)</i>	Expected May 2025
M.S. in Computer Science , <i>Virginia Polytechnic Institute and State University (4.0/4.0)</i>	Expected May 2024
Graduate Certificate in Engineering Education , <i>Virginia Polytechnic Institute and State University (4.0/4.0)</i>	Expected May 2024
B.S. in Computer Science and History , <i>University of Virginia (3.4/4.0)</i>	August 2016 — May 2020
Study Abroad - Global Technology Practice , <i>University of Stuttgart (3.7/4.0)</i>	May 2017 — June 2017
A.A. in General Studies , <i>Laurel Ridge Community College (4.0/4.0)</i>	August 2013 — May 2016

RESEARCH EXPERIENCE

Graduate Research Assistant **June 2020 — Present**
Virginia Tech *Blacksburg, VA*

- Student-Teaching Assistant Interactions
 - Collected quantitative data on office hour interactions to identify gaps in TA training programs
 - Developed an interview protocol to investigate office hour interactions, specifically interactions that students and TAs identify as unsuccessful
- SPLICE
 - Created infrastructure for a new catalog of embedded smart learning objects and other CS Education data objects including datasets and tools
 - Measured and identified suspicious behaviors in programming submission data
 - Contributed to a live catalog of smart learning objects for computer science education using the LTI protocol
- OpenDSA eTextbook System
 - Containerized and upgraded the OpenDSA eTextbook system to Rails 6 and Python 3.8 using Docker
 - Provided maintenance and support to users of OpenDSA and led development work on backend features
 - Mentored several undergraduate research projects creating new features in OpenDSA
- History of Computing Workshop
 - Participated in a workshop to develop material for a History of Computing course offered at Virginia Tech as a collaboration between the History, STS, and CS departments

Undergraduate Research Assistant **August 2018 — May 2020**
University of Virginia *Charlottesville, VA*

- Lighthouse for Computer Science
 - Conducted observations of CS1 and CS2 labs in order to assess the affects of new methods on student performance
 - Organized peer mentor groups for CS1 classes in order to foster growth and persistence in Computer Science

TEACHING EXPERIENCE

Instructor of Record / CS 4104 Analysis of Algorithms <i>Virginia Tech</i>	Spring 2024 <i>Blacksburg, VA</i>
Instructor of Record / CS 3704 Intermediate Software Development <i>Virginia Tech</i>	Spring 2023 <i>Blacksburg, VA</i>
Teaching Assistant / CS 4104 Analysis of Algorithms <i>Virginia Tech</i>	Spring 2022 <i>Blacksburg, VA</i>
Student Instructor / CS 1501 Computational History <i>University of Virginia</i>	Fall 2019 <i>Charlottesville, VA</i>

HONORS AND AWARDS

Participant: CMU LearnLab Summer School Computing Education Research Track	2023
Service Award: Department of Computer Science	2023
Davenport Fellowship: Virginia Tech	2021 — 2022
Pratt Fellowship: Virginia Tech	2020 — 2023
New Horizons Graduate Scholar: Virginia Tech	2020 — 2025
Louis T Radar Chairperson/Research Award: University of Virginia	2020
Rodman Scholar: University of Virginia	2016 — 2020

PUBLICATIONS AND PRESENTATIONS

Conference Papers

- **Alexander Hicks**, Cliff Shaffer. "WIP: Exploring Office Hour Interactions in an Data Structures and Algorithms Course" Under Review

Workshop Papers

- **Alexander Hicks**, Cliff Shaffer. "Containerizing an eTextbook Infrastructure". *Fifth Educational Data Mining in Computer Science Education (CSEDM) Workshop*, June 2021.
- **Alexander Hicks**, Kamil Akhuseyinoglu, Cliff Shaffer, and Peter Brusilovsky. "Live Catalog of Smart Learning Objects for Computer Science Education". *Sixth SPLICE Workshop: Building an Infrastructure for Computer Science Education Research and Practice at Scale*, August 2020.

Presentations

- Fifth Educational Data Mining in Computer Science Education (CSEDM) Workshop at the 14th International Conference on Educational Data Mining - *Containerizing an eTextbook Infrastructure* - June 2021
- Sixth SPLICE Workshop: Building an Infrastructure for Computer Science Education Research and Practice at Scale - *Live Catalog of Smart Learning Objects for Computer Science Education* - August 2020

Invited Presentations

- Seventh SPLICE Workshop: CS Education Infrastructure for All III: From Ideas to Practice at the 52nd ACM Technical Symposium on Computer Science Education - *Live Catalog of Smart Learning Objects for Computer Science Education* - March 2021

WORK AND PROJECT EXPERIENCE

Developer and Maintainer / Volunteer Portal

August 2019 — Present

Meals on Wheels

Charlottesville, VA

- Developed a new web application using Docker and Django to help Meals on Wheels of Charlottesville manage volunteers and keep track of customer records as part of a Computer Science capstone project
- Provided ongoing maintenance and new feature development towards supporting additional Meals on Wheels chapters

Software Engineering Intern / Internal Tracking Portal

June 2019 — August 2019

McKesson Corporation

Irving, TX

- Collaborated in an Agile development environment to implement new API calls and redesign the user experience using Vue.js for an internal tracking application

ADVISING

Graduate

- Hyunjin An: MEng Computer Science at Virginia Tech (2022)

Undergraduate

- Moeed Chaudhry: BS Computer Science at Virginia Tech (2023)
- Devanshu Khadka: BS Computer Science at Virginia Tech (2023)
- Shreya Mallamula: BS Computer Science at Virginia Tech (2022-2023)
- Nahom Atsheba: BS Computer Science at Virginia Tech (2022)
- Sa Hyun Min: BS Computer Science at Virginia Tech (2021)
- Sean Gruber: BS Computer Science at Virginia Tech (2020)
- Peixuan Ge: BS Computer Science at Virginia Tech (2020-2021)

SERVICE

Working Group Member: CSSPLICE Smart Learning Content Protocols Working Group	2023 — Present
Coordinator: Digital Education Reading Group	2020 — Present
Representative: PROTEGE Graduate Student Advisory Board	2023 — Present
Advisor: Computer Science Graduate Council	2023 — 2024
Representative: Computer Science Diversity Committee	2023 — Present
Reviewer: ASEE Annual Conference & Exposition	2023
Reviewer: SIGCSE Technical Symposium	2023
President: Computer Science Graduate Council	2022 — 2023
Representative: Computer Science Graduate Program Committee	2022 — 2023
Member: Center for Human-Computer Interaction	2022 — Present
ACM Student Research Competition Judge: SIGCSE Technical Symposium	2022, 2023
Small Groups Coordinator: New Horizons Graduate Scholars	2021 — 2023
Small Group Leader: New Horizons Graduate Scholars	2021
Peer Mentor: New Horizons Graduate Scholars	2021 — 2022
Vice President: Computer Science Graduate Council	2022 — 2023
Blue Ridge Highlands Regional Science Fair Judge	2021, 2022
Senator: Graduate Student Association	2020 — 2021