

# Alex Hicks

115 College Avenue Apt 210 - Blacksburg, VA 24060

✉ alexhicks@vt.edu | 🏠 awhicks.github.io | 🔗 awhicks | 🐙 awh4kc | 📄 awh4kc

## Education

### Virginia Polytechnic Institute and State University, College of Engineering

Blacksburg, VA

PH.D. IN COMPUTER SCIENCE

May 2020 - Expected 2025

- Advisor: Dr. Clifford Shaffer
- Relevant Course History: Information Storage and Retrieval, Operating Systems

### University of Virginia, School of Engineering and Applied Science

Charlottesville, VA

B.S. IN COMPUTER SCIENCE - B.A. IN HISTORY

August 2016 - May 2020

- Relevant Course History: Algorithms (**Python, LaTeX**), Program and Data Representation (**C++, Linux/Unix, Bash**), Operating Systems (**C**), Software Development Methods (**Java, Git**), Computer Architecture (**C/C++**), Internet Scale Applications (**Python**), Cloud Computing

### University of Stuttgart

Stuttgart, Germany

GLOBAL TECHNOLOGY PRACTICE

May 2017 - June 2017

- Attended a study abroad program in Stuttgart that focused on the development and use of technology in Germany and the role of cultural values in shaping technological development and use

## Skills

**Programming Languages** Python, C/C++, Java, LaTeX, Bash, Ruby

**Tools and Technologies** Django, Docker, AWS, Linux/Unix, Git, Rails, Kubernetes, TravisCI, Kafka, Elasticsearch, Apache Spark, Rails

## Work Experience

### Graduate Research Assistant

Blacksburg, VA

VIRGINIA TECH

June 2020 - Present

- Contributed to a live catalog of smart learning objects for computer science education using the LTI protocol - 🔗
- Helped containerize and upgrade the OpenDSA eTextbook system to **Rails 6** and **Python 3.8** using **Docker** - 🔗
- Participated in a workshop to develop the material for the History of Computing course at Virginia Tech offered starting Fall 2020

### Undergraduate Research Assistant

Charlottesville, VA

UNIVERSITY OF VIRGINIA

August 2018 - May 2020

- 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
- Temporal Graphing
  - Worked with professors in both the Computer Science and History departments in order to apply new Computer Science research to historical data sets
  - Visualized Holocaust SS Guard movements using temporal graphing
- Computer Science Advising Assistant
  - Created the base for a web application using **Docker, Django, React**, and a microservice architecture in conjunction with several other students in order to provide a platform to handle UVA course advising

### Undergraduate Teaching Assistant

Charlottesville, VA

UNIVERSITY OF VIRGINIA

August 2018 - May 2020

- Served as a Teaching Assistant for CS 2110 Software Development Methods and CS 4102 Algorithms
- Led a recitation session for that reviewed course content by exploring examples related to relevant lecture material and held office hours to provide assistance for students with homework and course content - 🔗
- Graded written homework assignments and led weekly lab section
- Helped lead the transition to online content using Discord, Zoom, and Piazza during the Spring 2020 semester

### Student Instructor - CS 1501 Computational History

Charlottesville, VA

UNIVERSITY OF VIRGINIA

August 2019 - December 2019

- Designed an introductory level Computer Science course exploring the history of computing and its evolution through a dual historical and technical context
- Created lectures, homework assignments, and in class activities combining technical topics with their historical contexts

### Meals on Wheels

Charlottesville, VA

DEVELOPER

August 2019 - May 2020

- 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
- Successfully migrated customer and volunteer data from the previous application through a database schema change

#### IN-CLASS PROJECT

January 2019 - May 2019

- Built a scalable and multi-tier service architecture with **Docker** and **Django** to provide a platform for home cooked meal sharing
- Indexed meals using a containerized pipeline with **Kafka** and **Elasticsearch**
- Generated co-views using Apache Spark to produce user recommendations in a scalable fashion

#### Software Engineering Intern

Irving, TX

#### MCKESSON CORPORATION


Summer 2019

- Collaborated with Senior Architects to implement new API calls and redesign user experiences using **Vue.js** for internal application development
- Participated in an Agile development environment

## Peer-Reviewed Publications

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#### WORKSHOP PAPERS

- **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

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#### Seventh SPLICE Workshop: CS Education Infrastructure for All III: From Ideas to Practice at 52nd ACM Technical Symposium on Computer Science Education

Virtual

#### PRESENTER FOR LIVE CATALOG OF SMART LEARNING OBJECTS FOR COMPUTER SCIENCE EDUCATION

March 2021

- Presented a live catalog of smart content using the LTI protocol on a publicly accessible LMS - 

#### Sixth SPLICE Workshop: Building an Infrastructure for Computer Science Education Research and Practice at Scale

Virtual

#### PRESENTER FOR LIVE CATALOG OF SMART LEARNING OBJECTS FOR COMPUTER SCIENCE EDUCATION

August 2020

- Introduced a live catalog of smart content using the LTI protocol on a publicly accessible LMS - 

## Honors and Awards

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2020	<b>Pratt Fellow</b> , Virginia Tech - Department of Computer Science	Blacksburg, VA
2020	<b>New Horizon Graduate Scholar</b> , Virginia Tech - College of Engineering	Blacksburg, VA
2020	<b>Louis T Radar Chairperson/Research Award</b> , University of Virginia - Computer Science Department	Charlottesville, VA
2016	<b>Rodman Scholar</b> , University of Virginia - School of Engineering and Applied Science	Charlottesville, VA

## Service

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#### Computer Science Graduate Council

Blacksburg, VA

#### MEMBER

August 2020 - Present

- Planned welcome events for incoming students
- Organized events at Graduate Recruiting Weekend including the virtual tour and the social session
- Participated in biweekly meetings for event planning and outreach

#### Rodman Council

Charlottesville, VA

#### FOURTH YEAR REPRESENTATIVE

August 2016 - May 2020

- Created Rodman Puzzle of the Week
- Taught several seminars including Star Wars and Taylor Swift to the entire Rodman body through the Rodman Seminar program
- Planned events for the fourth year Rodman class including participation in Trick-or-Treating on the Lawn and Trivia Night