

# Alex Hicks

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## Education

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

PH.D. IN COMPUTER SCIENCE

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

Blacksburg, VA

May 2020 - Expected 2025

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

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

- 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

Charlottesville, VA

August 2016 - May 2020

### University of Stuttgart

GLOBAL TECHNOLOGY PRACTICE

- 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

Stuttgart, Germany

May 2017 - June 2017

## Skills

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### 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

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### Graduate Research Assistant

Blacksburg, VA

June 2020 - Present

VIRGINIA TECH

- 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

## Rebu - 🍔

Charlottesville, VA

### IN-CLASS PROJECT

- 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

January 2019 - May 2019

## 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

- 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

August 2020 - Present

### 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