# Joshua Geden

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## Experience

**Software Engineer Intern** May 2021 - Aug. 2021
Berkeley National Lab, National Energy Research Scientific Computing Center
- Developing software with React and Python to extend Jupyter notebook
- Exposing NERSC's HPC and storage systems to Jupyter
- Making supercomputing more literate and user friendly

**Teaching Assistant** Jan. 2020 - May 2021
Duke University, Computer Science Department
- CS230, Discrete Math for Computer Science, Jan 2021 - present
  - Taught topics including proofs & logic, set theory, induction, probability, and graph theory
- CS201, Data Structures & Algorithms, Jan 2020 - Nov. 2020
  - Taught topics including arrays, linked-lists, maps, trees, queues, stacks, and time & space complexity analysis

**Research Intern** June 2018 - July 2018
Furman University, Biology Department, Haney Lab
- Designed methodology; collected and analyzed field data
- Presented research poster at two academic conferences

## Education

**Duke University**, B.S., Computer Science & Linguistics Aug. 2019 - May 2023
Current GPA: 3.98/4.0
Activities: International Collegiate Programming Competition Club, researching applications of NLP & ML to combat vaccine misinformation with Yang Lab

**S.C. Governor's School for Science & Mathematics** Aug. 2017 - May 2019
Graduating Unweighted GPA: 4.0, Weighted GPA: 5.204
Activities: Robotics Team Captain, Computer Science Tutor, Captain of Mock Trial Club, President of Youth in Government Club

## Honors and Awards

**Dean's List**, Duke University Fall 2019
**First Prize, Environmental Science Research**, S.C. Junior Academy of Science March 2019
**Dean's List**, Coker University Spring 2019
**National Merit Scholarship Finalist** Spring 2019
**U.S. Presidential Scholars Candidate** Spring 2019

## Projects

**Duke Pet Tracker Web Application**
- Developed a full-stack, multi-user, location-based image sharing web application
- Technologies used: Vue, Express, Google Firebase, Google Passport OAuth

**RISC Processor**
- Designed a 16-bit MIPs-like word addressed RISC architecture
- Implemented design in Logisim and tested using MIPs-like assembly files

**Huffman File Compressor**
- Used BinaryTrees and PriorityQueues to implement Huffman encoding algorithm
- Achieved average compression rate of 40%

**SimplyFrank Simulated Compiler and Assembler**
- Created a BASIC-like programming language named SimplyFrank
- Implemented a compiler in C++ to compile SimplyFrank code into simulated assembly code

**FIRST Robotics OnBot Java Control System**
- Developed autonomous & driver-operated robot control systems in Java
- Controlled robot at regional competition for team and came in 2nd place

## Skills

Java, Python (sklearn), C, C++, Javascript (Vue, React, Express, Node), R (dplyr & ggplot)
Familiar with Git and Linux development environments
Coursework in Data Structures, Computer Architecture, Web Applications, & Data Visualization