

My name is Thomas Hilton Johnson III, and I am Junior who attending Elizabeth City State University at Elizabeth City, North Carolina. I gained a passion for technology at the age of four when I reset the language on the family computer to Chinese. From there, science fiction stories were my main source of reading material as they brought forth the technology the human mind could imagine. Under various teachers, especially my Exploring Technology teacher Mr. William Wall and the wise high school teacher Mr. Arthur Close, I began to have a fixation on technology, mainly driven by a curiosity of how devices worked or could be improved. Rewards in the form of an Exploring Technologies trophy and induction into the career-focused National Technical Honor Society allowed for more concentration in the field of technology until high school graduation.

I am currently taking part in the Center of Excellence in Remote Sensing Education and Research (CERSER) program at ECSU that encourages the attainment of Master's and Doctoral degrees. CERSER, provides a great amount of exposure to the applications of various computer systems and software packages.

As technology grows and more platforms become dependent on efficient computers to run advanced tasks, CERSER is providing the skills needed to handle the developments in coding and operating systems that are revolutionizing the world. Training sessions in Mac Operating systems, Adobe Dreamweaver and Adobe Photoshop will prove useful in the future in the development of web pages for documenting my research. Throughout the CERSER program, there is an emphasis on the construction of well-organized resumes and professional statements.

I am also a member of the Pi-Byte club which gives its members opportunities to explore coding disciplines while providing a hub within ECSU for computer science and mathematics majors to congregate to assist one another in gaining capabilities to stay ahead of the curve in the global market.

During the spring of 2017, I was involved in a research team under the mentorship of Dr. Jerome Mitchell to compare the efficacy of neural network models to linear regression models in the classification of the Supersymmetry dataset using from the University of California, Irvine's data repository. The Python script language was utilize during this project. Supersymmetric particles could not be detected directly at the time although the conditions that could indicate their presence could be detected. Through a number of tests involving trained neural network and linear regression models, the neural network models faired better overall in classifying the data.

During the summer of 2017, I went to the Indiana University Summer Research Opportunities Research Experience for Undergraduates in Computing in Bloomington, Indiana. There I was working with dataframes using the Python programming language to perform data analysis on Wikipedia's editorial community under my mentors Dr. Apu Kapadia, Dr. Robert Kraut, and Ph.D. Student Pat Shaffer. I had to do extensive work in the Pandas module of Python and gained experience utilizing the Bokeh module for Python.

For the semester of Spring 2018, Dr. Jerome Mitchell mentored my teammates and me within a research group focusing on using TensorFlow in Python to implement machine-learning models that could detect ships within a photograph. The variation of neural network applied was a convolutional neural network, which was utilized due to the input for the neural network being pictures. The results pointed to the neural network needing improvement, as it could not identify all of the targeted boats located within the provided image during its test run.

During the summer of 2018, I interned at the Texas Advanced Computing Center (TACC) through the Science Gateways Community Institute where my tasks were focused on employing Bootstrap, HTML, CSS, JavaScript, and PHP for front-end work. This whetted my ability create, maintain and develop web pages and websites on the front end. The internship has also increased my ability to work in cooperation with others in regards team-based projects which has evolved my communication skills extensively. Considering this was my first introduction to PHP, Bootstrap, and JavaScript, I was able to get real world experience with developing responsive webpages for users.

During the summer of 2019, I interned at the National Center for Atmospheric Research at Boulder, Colorado through the Summer Internships in Parallel Computational Science. My mentor was Dr. Brian Vanderwende and I had two projects that I worked on for the duration of my internship. The first was a set of Jupyter Notebooks to be used as tutorials for utilizing the computational resources available and the second project being a updatable web application for displaying the software available on the computational systems. The entirety of this work is titled: *Development of Interactive HPC Documentation*. Here is a link to the work: <https://www2.cisl.ucar.edu/siparcs-2019-johnson>.

Through my academic coursework, I have acquired experience in Java, C++, C, Scala and bash. In regards to C and C++, I have experience with makefiles and the utilization of cmake. I have also gained experience in setting up and deploying remote servers in the Microsoft Azure platform.

In the future, pursuing a Bachelor's, Master's, and Doctorate Degree in Computer Science will be a priority. Giving back to the communities that have added to my education will be a goal for my future as I pursue a career in high performance computing or nanotechnology. My endgame is to build a business aimed at providing technology focused solutions to issues in society. The aim is to use innovation and invention to design new means of approaching issues that affect the private, public, and academic sectors.

The reason for my pursuit of high performance computing or nanotechnology as the focus of my career is due to the capabilities that both fields have in providing the means to make a difference within the world. High performance computing allows for the maximization of computational resources for any given number of activities from modeling to research requiring abundant computational resources.