

**First Name Last Name**

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Citizenship: United States

**EDUCATION:**

**M.Eng.**, (August 20XX), Virginia Tech, Blacksburg, VA United States

**Major:** Computer Science & Applications

52 Credit Hours Completed

**GPA:** 3.74 of a maximum 4.0

**B.S.**, (April 20XX), University Name, City, State United States

**Major:** Computer Science

**Minor:** Mathematics

135 Credit Hours Completed

**GPA:** 3.94 of a maximum 4.0

**Relevant Coursework:**

Network Theory & Design

Theory of Algorithms

Database Concepts & Programming

Combinatorics

Operating Systems

Data Analytics

[If you are completing a thesis or dissertation and do not want to make it a focus of your resume, add it here.]

CLASS PROJECT: Capstone Project (Spring 2021): Collaborated with a group of 2 students to create a Virginia COVID-19 vaccine dashboard that uses data mining and data analytics principles to predict the spread of COVID-19 in Virginia and optimize vaccine distribution to minimize cases/deaths. Wrote a five-page paper and presented findings to a class of 13 students.

CLASS PROJECT: Data Analytics II (Spring 2021): Collaborated with a student to use data analytics tools to characterize the interplay between community mobility and COVID-19 spread in the United States. Wrote a seven-page paper and presented findings to a class of 40 students.

CLASS PROJECT: Social Media Analytics (Spring 2021): Collaborated with a group of 2 students to use data analytic and machine learning tools to compare the structure of factual and misinformation tweets related to COVID-19 vaccines. Wrote a nine-page paper based on the findings.

CLASS PROJECT: Computer Science Capstone (Spring 2019): Implemented a local computation algorithm for the Maximal Independent Set problem and compared its results with the conventional sequential algorithm. Was one of four students selected to present findings to a panel of 4 judges and 40 spectators.

**WORK EXPERIENCE:**

[If you are completing a thesis or dissertation and want to expand on your work, add it here using similar formatting as other work experiences.]

**National Laboratory: Computer Science and Mathematics Division (Month Year - Present)**

Street Address, City, State, Zip, United States

**Summer Research Intern**

**Salary:** [Salary] USD Per Month, **Hours per week:** 40

**Supervisor:** First Name Last Name (Supervisor Phone Number); **Okay to contact this Supervisor:** Yes

**Duties, Accomplishments and Related Skills:**

**OPERATING SYSTEM VIRTUALIZATION:** Built operating system-level virtualization software using Docker to enhance cyber security for critical energy infrastructure. Created images for database management, web scraping, and machine learning containers. Connected images together with Docker Compose and docker networks.

**NoSQL DATABASE MANAGEMENT:** Created and managed NoSQL databases using MongoDB for containing manuals pertaining to cyber security requirements for industrial control systems. Generated collections based on web scraping results. Constructed documents derived from web pages metadata.

**WEB SCRAPING:** Wrote web scraping scripts using Python's BeautifulSoup package for gathering documents on ICS security standards, guidelines and best practices originating from government, industry and standardization (GIS) bodies. Conducted automated search engine queries on keywords of interest.

**KEY ACCOMPLISHMENTS:** Will present research project results in front of a panel of 4 judges and spectators. Will present a poster in a symposium at the conclusion of the internship.

**Virginia Tech College of Engineering (Month Year – Month Year)**

Street Address, City, State, Zip, United States

**Graduate Assistant**

**Salary:** [Hourly Pay] USD Per Hour, **Hours per week:** Up to 20

**Supervisor:** First Name Last Name (Supervisor Phone Number); **Okay to contact this Supervisor:** Yes

**Duties, Accomplishments and Related Skills:**

**DATA ANALYSIS:** Quantified results from a 66-page post-program survey of a graduate school minority engagement program. Categorized similar questions and answers together. Prepared results for more subjective analysis.

**QUALITATIVE RESEARCH:** Coded results from a 20-page program survey given to administrators, faculty, and students. Characterized the general sentiments of the answers to each. Derived general themes of all the answers.

**KEY ACCOMPLISHMENT:** Wrote several sections of paper accepted to conference.

**National Laboratory: Computational Sciences and Engineering Division (Month Year – Month Year)**

Street Address, City, State, Zip, United States

**Summer Research Intern**

**Salary:** [Weekly Pay] USD Per Week, **Hours per week:** 40

**Supervisor:** First Name Last Name (Supervisor Phone Number); **Okay to contact this Supervisor:** Yes

**Duties, Accomplishments and Related Skills:**

**DATA PREPROCESSING AND ANALYTICS:** Preprocessed and analyzed data gathered from High Flux Isotope Reactor (HFIR) at ORNL using data analytics tools in Python and R. Changed data types, removed null attributes/records, and used data sampling techniques such as random sampling and stratified sampling.

**MACHINE LEARNING:** Trained and tested HFIR data on several machine learning classification algorithms using Python's Scikit-learn library and R's Caret package. Employed algorithms such as K-Nearest Neighbors, Naive Bayes, Ensemble methods, and Support Vector Machines. Used confusion matrices of each method to compare their results.

**INFORMATION FUSION:** Implemented information fusion algorithms found in literature in order to combine individual classifier results. Used the trained Adaboost fusor and the analytic Chow's Fusor to offset disadvantages of individual classifier methods and obtain more generalizable results.

**KEY ACCOMPLISHMENT:** Presented research findings in front of a panel of 4 judges and spectators.

**[University Name] Department of Aeronautics and Astronautics (Month Year – Month Year)**

Street Address, City, State, Zip, United States

**Summer Research Intern**

**Salary:** [Weekly Pay] USD Per Week, **Hours per week:** 40

**Supervisor:** First Name Last Name (Supervisor Phone Number); **Okay to contact this Supervisor:** Yes

**Duties, Accomplishments and Related Skills:**

**MULTITHREADED PROGRAMMING:** Added further functionality to a multithreaded control program for manipulating and gathering data from Electro-Aerodynamic (EAD) propulsion devices in Python. Converted binary data outputs from an A/C power supply into human-readable data using Python with Windows-based APIs. Used Python to automate the use of a temperature probe and webcam.

**NUMERICAL SIMULATION:** Simulated numerous EAD geometries using a 2-D electrostatic finite element solver (FEMM) in Lua. Used scripts to simulate numerous EAD geometries in order to determine which ones yield the highest electric field intensity. Automatically drew numerous EAD geometries on FEMM's CAD-like interface.

**DATA ANALYTICS:** Created scripts for analyzing data sets generated from simulations runs. Used a Jupyter Notebook script to read and analyze all the text files generated by the Lua scripts. Generated plots showing how a particular variable of interest affects a chosen field intensity characteristic.

**KEY ACCOMPLISHMENT:** Presented a poster in a symposium at the conclusion of the internship.

**Virginia Tech Network Dynamics and Simulation Science Laboratory (Month Year – Month Year)**

Street Address, City, State, Zip, United States

**Summer Research Intern**

**Salary:** [Monthly Pay] USD Per Month, **Hours per week:** 40

**Supervisor:** First Name Last Name (Supervisor Phone Number); **Okay to contact this Supervisor:** Yes

**Duties, Accomplishments and Related Skills:**

**HIGH PERFORMANCE COMPUTING:** Operated high performance computing clusters on Linux servers to run epidemic simulations in the U.S.

**ALGORITHM DESIGN AND ANALYSIS:** Analyzed a greedy optimization algorithm in order to identify key areas of improvement. Translated algorithmic modifications into code for a linear program that implemented the optimization algorithm.

DATA ANALYTICS: Visualized and derived insights from large data sets using data mining, analytics, and plotting modules in Python

KEY ACCOMPLISHMENTS: Presented my research findings at an end-of-internship event in a room with 15 people. Created a poster based on my research results.

**[University Name] Technology Service (Month/Year – Month/Year, Month/Year – Month/Year, Month/Year-Month/Year)**

Street Address, City, State, Zip, United States

**Student Worker**

**Salary:** [Hourly Pay] USD Per Hour, **Hours per week:** 20

**Supervisor:** First Name Last Name (Supervisor Phone Number); **Okay to contact this Supervisor:** Yes

**Duties, Accomplishments and Related Skills:**

INSTALLATION AND CONFIGURATION: Installed and configured appropriate software and functions according to specifications.

TROUBLESHOOTING AND SECURITY: Performed troubleshooting to diagnose and resolve problems. Ensured security and privacy of networks and computer systems.

CUSTOMER SUPPORT: Assisted students, administrators, and faculty with technical issues with university software/hardware.

KEY ACCOMPLISHMENTS: Completed 2.5 school years' worth of technical support.

**SKILLS:**

**Programming and Scripting Languages** - C/C++, JAVA, Python, Lua, R, Bash

**Hosting Platforms** - Windows, Linux, VMware

**Data Analytics** - Pandas, R, NumPy, SciPy, Matplotlib, Seaborn

**Database Platforms** - NoSQL, MongoDB

**Machine Learning** - Scikit Learn, NLTK, Caret

**Debugging Tools** - GDB, PDB

**DevOps Concepts and Tools** - Docker, Git, Subversion

**Systems Engineering Principles** - Agile, Scrum, Kanban

**ACTIVITIES & LEADERSHIP ROLES:**

Graduate Research Assistant (Month Year – Month Year)

- Conducted literature reviews for problems in theoretical computer science.
- Created write-ups of mathematical models and proofs.

Graduate Teaching Assistant (Month Year – Month Year)

- Held office hours twice a week for a 4000-level algorithm design and analysis course.
- Graded homework assignments and exams providing timely feedback to students.

Peer Tutor and Supplemental Instructor (Month Year – Month Year)

- Tutored 200 to 400-level computer science courses for 10 hours a week.
- Held a weekly review session for a 300-level data structures course.

[University Name] Computer Club (Month Year – Month Year)

[University Name] Mathematics Club (Month Year – Month Year)

**Honors and Awards:**

GEM Master's Fellowship (Year)

- National GEM Consortium
- Provided for an internship at [National Lab] for 2 summers, paid full tuition and fees for 2 years of my Master's program, and provided for a living stipend during my graduate studies.

New Horizons Graduate Scholar, Virginia Tech College of Engineering (Year)

- Provided funding for graduate teaching assistantship and a graduate research assistantship for 2 full years of my master's program

Academic Day of Excellence: Oral Presentation Finalist, University Name (Year)

- One of 4 students selected to give an oral presentation of their project.

Peer Tutor of the Month, [University Name] Center for Academic Vision \* Excellence (Year)

- Peer tutor of the month for October 2018

Excellence in Experiential Learning Award, University Name (Year)

- Given to a student with junior or senior standing and a cumulative GPA of at least 3.25 who has exceeded the standard expectations of performance within an internship or field placement.

**Selected Publications:**

[If you have publications relevant to your application, add them here.]