

# CAROLINE JAREB

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**CAREER OBJECTIVE:** Highly motivated software developer with excellent problem solving and communication skills from a variety of technical, mathematical, and creative experiences. Seeking full time employment to help create solutions for the greater good and continue to grow personally and professionally.

## EDUCATION

**University of Virginia**, College of Arts and Sciences, Charlottesville, VA *Expected May 2025*  
Bachelor of Arts in Mathematics and Computer Science

- Relevant Coursework: Data Structures and Algorithms 1 and 2, Computer Systems and Organization 1 and 2, Cybersecurity Ordinary Differential Equations, Intro to Probability, Basic Real Analysis, Survey of Algebra, Introduction to Geometry
- GPA: 3.615 / 4.0
- Semester Abroad DIS Copenhagen - Courses in Game Development and Artificial Intelligence *Fall 2023*

## EXPERIENCE

*Data Visualization Intern*, **Biocomplexity Institute at UVA**, Charlottesville, VA *August 2024 – Present*

- Mentor: Samarth Swarup
- Utilized UVA's Rivanna High Performance Computing System and PostgreSQL to extract and visualize geospatial and weather data of large synthetic population datasets in Python and Plotly
- Plan to analyze and predict temperature and flooding health effects with and without activity modeling

*Computing for Global Challenges Intern*, **Biocomplexity Institute at UVA**, Charlottesville, VA *June 2024 – August 2024*

- Mentors: Mandy Wilson, Henning Mortveit
- Studied the effects of disease spread by developing tools in Python (Pandas, Matplotlib) and JavaScript (D3) to visualize massive networks of simulated epidemic transmission networks
- Presented and discussed results and challenges weekly with other researchers and interns culminating in a poster session

*Teaching Assistant*, **University of Virginia**, Charlottesville, VA *January 2023 – May 2024*

- Assisted Prof. Elizabeth Orrico with CS 2120 – Discrete Mathematics and Theory
- Wrote and graded weekly assignments on set theory, proof writing, logic, relations, etc.
- Held office hours and guided students through proofs and to a deeper understanding of discrete mathematics

*Lighting Production Assistant*, **University of Virginia**, Charlottesville, VA *January 2024 – Present*

- Learned aspects of theatrical lighting hands-on: parts and functions of instruments, programming cues, and design
- Cabled and hung lights and read light plots with 100+ instruments for 3 of UVA Drama's theater spaces
- Carefully followed safety protocols and communicated frequently with coworkers

*Producer*, **First Year Players (FYP)**, Charlottesville, VA *November 2023 – Present*

- Acted as primary representative of FYP (official University organization) and oversaw Production, Technical, and Artistic Staff
- Coordinated all aspects of FYP to produce a full length musical per semester and maintain the organization's vision through scheduling and leading meetings, budgeting, collecting feedback, and implementing relevant changes

## RELEVANT COURSEWORK

**Game Development – DIS Copenhagen** *Fall 2023*

- Created 2D and 3D games in teams of three in Unity to learn fundamentals of video game design
- Employed singleton design principles, interfaces, abstract classes, UI, and more advanced coding strategies
- Met game developers in Copenhagen, Aarhus, Berlin, and Frankfurt to learn about the gaming industry

**Artificial Intelligence – DIS Copenhagen** *Fall 2023*

- Applied fundamental computing algorithms to an agent search environment in a semester-long group project with presentations
- Developed heuristic algorithms and analyzed data from BFS, DFS, greedy, and A\* searches

**Software Development Essentials – CS 3130** *Spring 2023*

- Completed weekly group Java programming assignments using git and Test Driven Development (TDD)
- Implemented Wordle game with working GUI, populated a dictionary with legal words, and did white and black box testing
- Learned SQL to create course registration project with students, courses, and course reviews stored in database

## SKILLS

- Proficient in *Python, Java, JavaScript, C, C#*
- Data and Data Visualization tools *Pandas, Matplotlib, Plotly, D3, SQL, PostgreSQL, R*
- Microsoft Office Suite and Google Workspace
- Experience with social media and Video Editing