

# CAROLINE JAREB

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## 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

*June 2024 – Present*

- Built tools in Python (Pandas, Plotly) and JavaScript to visualize massive networks of simulated epidemic transmission networks in the Summer 2024 Computing for Global Challenges program; Mentors: Mandy Wilson and Henning Mortveit
- Extracted and visualized geospatial and weather data from large synthetic population datasets to create choropleth maps and analyze temperature and flooding health effects with and without activity modeling; Mentor: Samarth Swarup

*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

*Assistant Producer*, **First Year Players**, Charlottesville, VA

*December 2022 – May 2023*

- Scheduled and reserved rooms for 100+ rehearsals and meetings and kept track of conflicts and cancellations
- Emailed important announcements to 200+ members of FYP weekly

*Lighting Apprentice*, **Live Arts**, Charlottesville, VA

*December 2022 – March 2023*

- Assisted Lighting Designer in programming the light board, hanging and focusing lights, and contributing to design ideas
- Operated light board and monitored that lights were working properly for 3 weeks of play performances

## 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, D3, SQL, PostgreSQL, R*
- Microsoft Office Suite and Google Workspace
- Experience with social media and Video Editing