

# Maxwell Brooks

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## Education

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**Virginia Tech**, Blacksburg, Virginia

*Expected Graduation, May 2027*

*Bachelor of Science in Computer Science - Data Centric Computing | Minor in Applied Mathematics*

**GPA:** 3.38/4.00

**Past Honors Received:** Dean's List with Distinction, Dean's List

**Relevant Coursework:** Data Structures and Algorithms, Machine Learning, Cryptography, Applied Combinatorics, Differential Equations, Theoretical Statistics, Discrete Math

## Skills

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**Programming Languages:** Python, Java, C, SQL, JavaScript, PowerShell

**Web Technologies:** React, HTML5, CSS3, REST APIs

**Frameworks & Libraries:** FastAPI, Flask, Langchain

**Tools and Platforms:** Docker, AWS Lambda, Amazon EC2, Git, Linux, Tesseract OCR, Pinecone, Microsoft Office

## Project Experience

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### AI Learning-Assistant

*October 2025 - January 2026*

- Engineered a Retrieval-Augmented Generation (RAG) system using Python and SQLite, improving AI response accuracy by 35% through custom text chunking and a vector database using metadata filtering and cosine similarity.
- Optimized document processing workflows by implementing a FastAPI backend that asynchronously handles PDF-to-text conversion and embedding generation, reducing user wait times for document analysis.
- Developed an interactive, responsive user interface using HTML, CSS, and JavaScript, enabling seamless real-time communication between the frontend and a private LLM via JSON-based API calls.

### InspireFly Satellite

*September 2024 - May 2025*

- Collaborated on a multidisciplinary team to develop and launch a CubeSat into orbit, designed to capture images and transmit them to a ground station
- Worked on the programming team, implementing and optimizing flight software in Python to enable communication between satellite components and ground station commands
- Responsible for ProvesKit implementation, git repo management, and class testing

### Personal Portfolio Website

*December 2025 - Present*

- Built a responsive portfolio website using HTML5, CSS3, and JavaScript, implementing smooth scrolling navigation, dynamic project components, and mobile-first design principles.
- Deployed and maintained the site using GitHub and Vercel, demonstrating version-controlled development and continuous deployment to production.

## Work Experience

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### O'Brien's Bar & Seafood Tavern - Host and Server

*Annapolis, Maryland*

*May 2025 - August 2025*

- Provided high-quality customer service in a fast-paced environment, managing seating flow, orders, and guests
- Communicated with kitchen staff to manage serving multiple tables at once in hectic restaurant setting

### Cape St. Claire Yacht Club - Senior Sailing Instructor

*Annapolis, Maryland*

*June - August 2022 & 2023*

- Supervised and instructed children ages 8-16 on sailing Optimis and 420 sailboats
- Displayed leadership and collaborative capabilities as well as a deeper understanding of the teaching process of sailing

## Certifications

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### AWS Cloud Practitioner Essentials

*Amazon*

*January 2026*