

# Joseph M. Morgan

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## Education

**North Carolina State University (NC State) - Raleigh, NC**

*Expected Spring 2024*

**BS in Aerospace Engineering**

**Relevant Coursework:** Dynamics, Solid Mechanics, Aerospace Vehicle Performance, Statics

GPA: 3.8/4.0 | Dean's List All Semesters

**North Carolina School of Science and Mathematics (NCSSM) - Durham, NC**

*Spring 2023*

**Relevant Coursework:** Computational Physics, Mechanical Engineering, Electrical Engineering

GPA: 4.8/4.0

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## Projects

**1981 Catalina 22 Sailboat & 1984 Chaparral 204 Powerboat**

*Summer 2020 - Present*

- Repairs and maintains mechanical systems (engines, rigging, etc)
- Diagrammed and implemented 12 Volt electrical systems from the ground up

**Project Portfolio Website**

*Summer 2024 - Present*

- Building a website to display skills, and projects using raw HTML, JavaScript, and CSS

**2008 Toyota 4Runner**

*Summer 2023 - Summer 2024*

- Designed and implemented mounting and cooling solutions for an “onboard” air compressor
- Replaced suspension and brake parts

**Waterproof Fabric Bucket**

*Spring 2024*

- Modeled various design options in Fusion 360 and SolidWorks
- Explored fabric lamination techniques in an iterative engineering design process

**Computational Physics**

*Spring 2023*

- Built a GUI-based Euler's method aerodynamic simulation using JavaFX to study lift equation parameters
- Calculated J/Psi Meson mass from CERN momentum data using Python

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## Work Experience

**MATLAB (CSC 113) Undergraduate Teaching Aid - NC State University, Raleigh, NC**

*Fall 2024-Present*

- Instructs a 35-student MATLAB course lab section on the practical application of new skills in programming and problem-solving

**Head Sailing Instructor - East Coast Sailboats, Southern Shores, NC**

*Summer 2016 - Summer 2024*

- Collaborated with instructors to teach beginner to intermediate sailing skills to children ages 7-17
- Managed risks on and around the water to ensure the safety of students and instructors

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## Activities, Leadership, and Accomplishments

**NC State Sailing Club Team “SailPack”, Raleigh, NC**

*Fall 2023 - Present*

- Competes against other collegiate club and varsity sailing teams in fleet racing and team racing events
- Studies wind and water physics to understand the best routes and tactics on the race course in variable conditions

**Eagle Scout - Boy Scouts Troop 117, Kitty Hawk, NC**

*Fall 2022*

- Awarded Eagle Scout rank after completing community-service Eagle Scout project consisting of over 60 hours of planning and work and managing 6 volunteers

**NCSSM Rocketry Club**

*Fall 2021 - Fall 2022*

- Fabricated rocket components using Fusion 360 and 3D Printers
- Collaborated to design and construct model rockets for flight within parameters in a competition