

Joseph M. Morgan

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Education

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

Expected Spring 2027

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

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

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

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