

Jackson Mock

(919) 667-3640 | jkmock@ncsu.edu | linkedin.com/in/jackson-mock

EDUCATION

North Carolina State University

Master's in Computer Science | Accelerated Bachelor's/Master's Program

Raleigh, NC

Expected May 2027

North Carolina State University

B.S. in Computer Science | Minor in Business Administration

Raleigh, NC

May 2026

GPA: 3.8/4.0

Coursework: Applied Web-Based Client-Server Computing, Foundations of Cryptography, Cloud Architecture, Concepts and Facilities of Operating Systems, Automated Learning and Data Analysis, C and Software Tools, Human Computer Interaction

PROFESSIONAL EXPERIENCE

Web Developer | SkySouth | Burlington, NC

December 2025 — March 2026

- Built a **custom PHP theme** with **Tailwind CSS** to replace SkySouth's legacy site, owning architecture, UI/UX, and responsive web implementation.
- Increased active users by **652%** and organic search sessions by **1,097%** YoY by implementing SEO-focused site architecture, metadata, and content targeting high-intent search queries.
- Implemented page-specific Schema.org **JSON-LD** structured data and a **301 redirect map** to preserve search rankings through the site migration.

Software Engineer Intern | Pearson | Durham, NC

June 2025 — August 2025

- Saved **over 100,000 hours** of manual labor annually by developing a Python image processing pipeline to automatically validate **millions of exams**.
- Added **crash recovery** that resumes long batch runs from saved JSON checkpoints.
- Extracted exam data from scanned pages using **EasyOCR** for text recognition and **OpenCV** for image preprocessing.
- Designed and iteratively refined interpretation logic, reducing false positives by **25x** through targeted improvements.
- Implemented **multithreading**, automated email status reports via SMTP, and configurable thresholds and source folders.

Research Assistant | Wolpack Innovations Software Engineering Research | Raleigh, NC

June 2024 — September 2024

- Developed **web scraping** applications to extract data and test files from hundreds of web pages.
- Automated **differential testing** across **25+** C compiler and optimization-level configurations to detect miscompilations where identical source code produced inconsistent output.
- Wrote **reproducible bug reports** with minimal test cases and exact compiler flags, enabling developers to isolate the root cause.

PROJECTS

PilotLog | TypeScript, Node.js, Fastify, PostgreSQL, PostGIS, Docker | Personal

October 2026 — Present

- Building a full-stack logbook and social app for student pilots: log multi-leg flights, track progress toward FAA private pilot requirements, map routes automatically with **ADS-B data**, and share flights with friends.
- Designed a **PostgreSQL schema** for users, flights, multi-leg routes and aircraft, with database constraints that enforce logbook rules and exact decimal flight time, managed through reversible SQL migrations.
- Loaded **16,000+** U.S. airports into **PostGIS** geography with a **GiST index** for nearest-airport and distance queries.
- Built a typed REST API with **Fastify** and **TypeScript**, with CRUD endpoints for aircraft, airports, and flights.

3D Flight Map Visualizer | React, Tailwind CSS, Deck.gl, MapLibre | Personal

September 2025 — October 2025

- Built an interactive 3D web app animating **22,000+ flights** over 23 years as arcs from origin to destination.
- Parsed flight logs for **ICAO airport codes** and generated monthly JSON datasets of coordinates.
- Designed a fully responsive UI for mobile and desktop.

SKILLS

Languages: Java, C, Python, HTML, CSS, JavaScript, TypeScript, Assembly, SQL

Frameworks: React, Spring, Tailwind CSS, Node.js, Deck.gl, Fastify, Express.js

Databases: PostgreSQL, PostGIS, Supabase, MongoDB, MariaDB

Technical Skills: RESTful Design, Unit Testing, Git, Docker, Figma