

John Butterfield

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EDUCATION

North Carolina State University, College of Engineering

Graduation: December, 2025

Bachelors of Science, Computer Science

Raleigh, NC

- **GPA: 3.73/4.0**
- **Dean's List:** 2021 Fall, 2022 Spring, 2022 Fall, and 2023 Fall, 2025 Spring Semesters
- **Relevant Coursework:** Software Engineering, Java, C and Software Tools, Data Structures and Algorithms, Operating Systems, Python, Networking, IoT Systems, Ethics in Computing,

TECHNICAL SKILLS

- **Programming Languages:** Java, Python, C, HTML/CSS, JavaScript, R, Julia, Solidity, SQL, Bash
- **Developer Tools:** GitHub, Git, Linux, Docker, AWS (S3, Lambda, IoT Core), MySQL, MQTT, HardHat, MetaMask, React, Open-vSwitch

PROGRAMMING PROJECTS

FreeFlow Forum | *React, Python, SQL, Blockchain*

- Built a full-stack decentralized crowdfunding platform with React, FastAPI, and Solidity smart contracts on the Ethereum Sepolia Testnet.
- Implemented token-based governance, wallet integration via MetaMask, and agile development with one-week sprints.

Loan Risk Machine Learning Classifier | *Python*

- Developed a machine learning pipeline using scikit-learn to predict loan default risk from applicant data.
- Implemented Random Forest with preprocessing, one-hot encoding, scaling, and custom feature engineering. Evaluated model via accuracy, confusion matrix, ROC, and precision-recall curves.

Raspberry Pi Cloud Photo Frame | *Python, AWS, MQTT, Raspberry Pi*

- Built a real-time photo sharing system using a Raspberry Pi, AWS IoT Core, and MQTT to publish images triggered by a physical button.
- Used AWS Lambda to process and store photos in S3, with a Pygame-based client subscribing to updates for live slideshow display.

Encrypted File Transfer System | *C, Python*

- Developed a secure file transfer system using C for LUCIFER-based encryption and Python for socket programming and real-time networking with speed tracking.

Portfolio Website | *React, TypeScript, HTML/CSS*

- Designed and deployed a dynamic, responsive personal portfolio website using React, TypeScript, and Bootstrap to showcase technical capabilities and project work, deployed at smugdrip.github.io

EXPERIENCE

FreeFlow Networks | Raleigh, NC

January 2025 - May 2025

Web-3 Developer Intern

- Designed, engineered and deployed blockchain-based funding solutions with transparent voting and staking mechanics on Ethereum blockchain.
- Coordinated with front-end and back-end teams to integrate blockchain functionalities, ensuring a smooth user experience and streamlined development workflows.