

NATHAN YU

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EDUCATION

Duke University

Bachelor of Science in Computer Science

Durham, NC

May 2024

- **GPA:** 3.9/4.0
- **Relevant Coursework:** Distributed Systems, Design & Analysis of Algorithms, Data Structures & Algorithms, Database Systems, Operating Systems, Network Architecture, Mobile Applications, Computer Architecture, Discrete Math for CS, Machine Learning

WORK EXPERIENCE

Bandwidth

Software Engineering Intern

Raleigh, NC

May 2023 – Present

- TBD

Duke University

Undergraduate Teaching Assistant for Design and Analysis of Algorithms

Durham, NC

January 2023 – May 2023

- Held office hours with queues up to 30 students, guiding students through proof and design of advanced algorithms.

Principal Financial Group

Software Engineering Intern

Des Moines, IA

May 2022 – August 2022

- Developed an investment rate comparison feature in Java Spring Boot as a part of a rate processing microservice that ensures the company does not lose millions of dollars through wrongly submitted rates.
- Implemented a REST API for comparison report generation and distribution using Java which automatically compares rates then emails rate comparison results to business analysts.
- Built out a jar to contain DB2 queries and mappers that enable insertion and loading of financial data for 8 different types of contracts.
- Worked in an Agile scrum team and followed CI/CD practice, using Postman, unit tests, and WebSphere logging for testing.

Marine Geospatial Ecology Lab

Data Science Intern

Durham, NC

May 2021 - January 2022

- Enhanced the accuracy of automated whale call detector through verification of right whale calls for over 2 weeks of audio data.
- Created confusion matrices and bar charts in R comparing the performance of 2 data analysts and an automated detector to discern differences in performance, efficiency, and accuracy when identifying whale calls.

PROJECTS AND EXTRACURRICULARS

Proof of Stake Blockchain Security Simulator | Go

February 2023 – April 2023

- Designed and implemented proof of stake blockchains in Go with slashing and reputation.
- Simulated distribution of machines using socket connections and concurrency with goroutines.
- Simulated network partition and long range attacks and how they affect malicious block verification and transaction approval.

Music Map Road Trip App | React Native, JavaScript, MongoDB, Express.js, Node.js

September 2022 – December 2022

- Designed and built a react native app with a team of 6 that allows users to record the music they listen to on a road trip.
- Integrated react native map API and Spotify's music API to record songs on a map and show a user's road trip listening statistics.
- Created API end points and Mongoose Schemas to record and use user, road trip, song, and other information.
- Designed user flows in Figma and created frontend for map and road trip screens with React Native.

HybridSight Hybrid Employee Attendance Web APP | React.js, AWS

June 2022

- Developed a full stack web app with a team of 7 to allow hybrid employees to see whether their coworkers were coming into office as a proof of concept for Principal Financial Group.
- Enabled users to join groups within their organization where they could mark their attendance as well as see the attendance of their group members on a dynamic calendar.
- Built user authentication with AWS Cognito, API calls with Lambda functions and API Gateway, and database with DynamoDB.

TECHNICAL SKILLS AND CERTIFICATIONS

Languages: Java, Python, SQL, C/C++, JavaScript, Swift, R, HTML, CSS

Libraries and Tools: Spring Boot, React.js, React Native, Git, MongoDB, Express.js, Node.js, Postman, AWS

Certifications: AWS Cloud Practitioner

AWARDS AND INTERESTS

Awards: Wolfram Alpha Award (HackDuke hackathon), Best use of echoAR (Sigma 3 Hack hackathon), CBUS Student Hack 2nd place

Interests: Duke Club Tennis, Fishing, Poker