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Jonathan Hopkins

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Education

Georgia Institute of Technology **B.S. in Computer Science** Jan. 2023 – (May 2025)

- Notable coursework: **(completed):** Data Structures & Algorithms, Computer Organization, Object-Oriented Design, Databases, Combinatorics, Linear Algebra. **(in progress):** Algorithm Design & Analysis, Computer Systems & Networks, High-Performance Computing. **GPA: 3.88**

University of North Georgia **B.S. in Physics** (left incomplete) Aug. 2020 – Dec. 2022

- Notable coursework: Computational Physics, Circuits, Electricity & Magnetism, Mechanics, Modern Physics, Differential Equations, Mathematical Proof. **GPA: 4.0**

Skills

- **Languages:** Java, C, Python, JavaScript
- **Frameworks & Libraries:** React, ChakraUI, Next.js, PyTorch, Scikit-Learn, NumPy, MatPlotLib
- **Other Tools:** Git/GitHub, Figma, Android SDK, MySQL, MongoDB, Node.js

Projects

Dun Dun Dungeon! | *Android, Java, Git/GitHub* Aug. – Dec. 2023

- Collaborated with an **Agile** development team to produce a dungeon crawler RPG game for Android.
- Spearheaded implementation of tile-based level maps, UI rendering, and a custom JSON parser for game assets, also contributing to other key features and unit testing with the **JUnit** framework.
- Utilized **MVVM architecture**, **design patterns**, and **SOLID** principles to develop maintainable and testable software, following best practices for object-oriented development.
- Managed the GitHub repository, conducted code reviews, produced documentation, and delineated team tasks.

GT Club Explorer | *React/Next.js, MongoDB, ChakraUI, Figma* Aug. – Dec. 2023

- Contributed to an endeavor to replace Georgia Tech's existing club/organization discovery site, aimed at improving searchability and **user experience** for students looking to get involved on campus.
- Drafted designs using **Figma** and implemented them in the site for a pleasing and smooth front-end.
- Implemented scrolling pagination and search/ranking functionality to help students easily find relevant clubs.

RescueTime Forecasting with LSTMs | *PyTorch, RescueTime API* June - July 2023

- Trained long-short-term memory neural networks (**LSTMs**) on four years of my own computer usage data from a popular time management app to understand and predict patterns in my productivity.

Circuit Simulator | *Python, NumPy, MatPlotLib* Sept. – Nov. 2022

- Developed a **computational model** to solve complex circuits constructed from ideal elementary components.

Polymer Simulation Analysis | *Keras, Scikit-Learn, NumPy, MatPlotLib* May – Dec. 2022

- Used **machine learning** and **neural network** techniques to identify phase transitions of simulated polymers.

Experience

Learning Assistant ***University of North Georgia*** Aug. 2021 – Dec. 2022

- Helped teach eight sections of the introductory **physics lab** course, including giving lectures, setting up equipment, addressing student difficulties, grading assignments, and administering exams.
- Noticed students were struggling with **Excel** and took initiative to make a series of **video tutorials**, which have helped hundreds of students and are still used after several semesters.
- Led training sessions over lab procedures for new learning assistants and professors.
- Conducted **data analysis** on assignment feedback and grades to inform our teaching practices. Presented findings at a conference of the American Association of Physics Teachers' local chapter.

Technician ***Water Quality & Trend Monitoring Lab*** May – Dec. 2022

- Conducted regular monitoring of Lake Lanier's surrounding watersheds by collecting water samples and analyzing them in both field and laboratory settings.
- Followed **safety procedures** for working with and disposing of chemicals.