

Nathanael Tesfaye

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EDUCATION

Vanderbilt University, School of Engineering - Cumulative GPA: 3.57

Nashville, TN

Bachelor of Science in Computer Science and Mathematics

Expected: May 2026

Relevant Coursework: Data Structures and Algorithms, Programming Languages, Operating Systems, Linear Algebra

TECHNICAL SKILLS

- **Languages:** Java, Python, Swift, C++, C, JavaScript, Kotlin, Racket, Prolog, Rust, SQL, Bash
- **Frameworks/Libraries:** React.js, Angular, Next.js, CoreML, PyTorch, NumPy, Linux, Confluence, JIRA, TKinter
- **Certifications:** Back-End Development and APIs w/ FreeCodeCamp, Software Engineering Simulation w/ JPMorgan

EXPERIENCE

Trane Technologies | Python, JavaScript, Kotlin, Selenium, Perforce

Tyler, TX

Software Engineering Intern

May 2024 – Present

- Created an application that allows employees to automatically upgrade and downgrade multiple indoor/outdoor units to any version simultaneously saving around **10-15 minutes per test**.
- Developed a Log Management System and Unit Test cases to ensure the application works as intended and is now being used by the current Systems Tests Engineers.
- Designed and implemented Python automation scripts to enhance and test system efficiencies in the “Tech App”, reducing manual input time by **more than 50%** and improving system **response times by 25%**.
- Designed and developed the integration of the **Next-Generation User Interface** framework by analyzing alternatives to help save the company over **\$1,000,000/annually in revenue**.

PROJECTS

Tik-Tak-AI? | Swift, CoreML, PyTorch, NumPy, AVFoundation, Core Data

[Github](#) | [View Demo](#)

- Incorporated a Tic-Tac-Toe based **Swift Application** allowing the user to play against a friend or the robot.
- Utilized **PyTorch** to generate **over 19,000** data points used for the [TicTacToeAI Model](#) via **CreateML Tabular Classifier**.
- Implemented the **MiniMax** Algorithm to generate accurate datapoints and the **RandomForest** Algorithm for training.
- Currently working on storing data via **Core Data** to help gather more data points as players play the game.

Spotify Music Pets | Next.js, MongoDB, Bootstrap CSS

[Github](#) | [View Project](#)

(In Progress)

- Developing a full-stack application where users receive pet assignments based on their most listened-to music on Spotify.
- Structured and managed user profiles, music preferences, and recommendation data using **MongoDB**.
- Designed and implemented **RESTful APIs** using Next.js to handle user data retrieval, authentication, and interactions.

LEADERSHIP

National Society of Black Engineers

Nashville, TN

Vice-President

Apr. 2024 – Present

- Played a pivotal role in developing and implementing the chapter’s strategic plan, resulting in a **25% increase in membership** and a **15% increase** in active member participation over the past academic year.
- Coordinated with university administration and external partners to **secure \$20,000 in sponsorships and grants**, funding various chapter activities such as workshops, networking events, and community outreach programs.

Google Developer Student Group

Nashville, TN

Social Media Lead

Sept. 2022 – Apr. 2023

- Managed the Google Developer Student Group’s Instagram account and GroupMe platform, delivering timely and engaging updates for all events, resulting in a **30% increase in member participation** over six months.
- Spearheaded event promotion efforts by designing **over 15 visually compelling electronic posters**.

Management Leadership for Tomorrow (MLT)

Washington, DC

Software Engineering Career Prep Fellow ‘26

Jan. 2024 – Present

- Accepted into a selective 18-month professional development program for high-achieving diverse talent in Technology.