Tahani Hassan

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EDUCATION

Duke University **Anticipated Graduation: May 2027**

Bachelor of Arts in Computer Science, Concentration in Software Engineering & Design | GPA: 3.39

Relevant Coursework: Python Programming, Data Structures & Algorithms, Statistics & R Programming, Computer Systems (Fall 2025), Discrete Mathematics & Proofs (Fall 2025), Design & Analysis of Algorithms (Spring 2026), Human Skills for Software Engineering (Spring 2026)

TECHNICAL SKILLS

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

Tools & Frameworks: React, Git, VS Code, Visual Studio, LabVIEW, Docker, JupyterLab, RStudio, Voilà, Linux

Skills: Frontend/UI Design, Backend Development, Web Development, Data Analysis, API Development

EXPERIENCE

Software Engineer Intern |Duke Human Vaccine Institute | *Durham, NC* **Aug 2025 - Present**

- Expanded VAXPATH, a biomedical data visualization platform for analyzing immune responses to vaccines, adding features such as interactive nodes, lineage tree layouts, and pathway highlighting.
- Automated and containerized backend pipelines for genomic data uploads and mutation annotations, improving scalability and streamlining analysis of large datasets.
- Improved usability and workflows in collaboration with immunologists, preparing VAXPATH for adoption and citation in upcoming vaccine research publications.

Software Engineer Intern| Duke University Code+ Program | *Durham, NC* **May 2025 - Jul 2025**

- Designed and implemented the foundation of VAXPATH, a full-stack biomedical data visualization platform for analyzing immune responses to vaccines, using Python, R, JupyterLab, and HTML/CSS.
- Developed core frontend features, including interactive visualizations, multiple layout options, and dynamic filtering for uploaded genomic datasets.
- Implemented backend workflows to connect genomic data uploads with real-time visualization, reducing manual analysis time and enabling researchers to explore immune sequence data efficiently.

Coding Instructor & Lead| CS Sidekicks | *Research Triangle, NC* **Dec 2024 - Present**

- Led over 15 Python coding workshops for underrepresented students (grades 4–11), strengthening their understanding of core programming concepts and boosting proficiency by 40%.
- Mentored 10+ students in computational thinking development, 80% expressing interest in STEM and coding.

PROJECTS

NeuroFocus - Pomodoro Productivity Suite for Neurodiversity| *React.js, Javascript, HTML, CSS, VS Code*

- Designed and developed a customizable Pomodoro productivity suite with immersive themes and soundscapes to support focus and accessibility for neurodiverse users, including ADHD.
- Implemented interactive tools (to-do list, notes panel, theme/sound selector) with modular React components, CSS theming, and backend persistence, ensuring an engaging, inclusive, and extensible user experience.

Recommender System | *Python, User-experience, Recommendation Algorithms, Data Analysis*

- Created a recommender system using Python to generate personalized suggestions across 3 categories.
- Implemented hybrid filtering algorithms, achieving 85% simulated accuracy across sample datasets of 20+ users.

Markov Text Generator | *Java, Natural Language Processing, Algorithm Optimization*

- Developed a Markov Chain text generator in Java trained on 10,000+ words to generate realistic sentences.
- Optimized runtime performance using HashMaps, reducing lookup time by ~40%.

LEADERSHIP & PROFESSIONAL DEVELOPMENT

MLT Career Prep Fellow | Management Leadership For Tomorrow | *Bethesda, MD* **Jan 2025 - Present**

- Selected as 1 of ~400 fellows nationwide for a coaching & professional development fellowship in the tech field.

Innovation & Outreach Chair| Duke MEDesign | *Durham, NC* **Sep 2023 - Jun 2025**

- Led cross-disciplinary teams in designing user-focused medical devices and organized outreach workshops that enhanced collaboration, accelerated development, and expanded organizational impact.