Nissi Otoo

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Education

Virginia Tech | Blacksburg, VA   EST. MAY 2027
B.S. Computer Engineering (*Machine Learning*) | GPA: 3.2
Relevant Courses: Digital Systems, Circuits & Devices, Introduction to ECE (C++), Computational Engineering (C++)

Skills

Languages: Python | MATLAB | LaTeX | C++ | C# | HTML | CSS | JavaScript | Verilog
Tools: Figma | AD3 Oscilloscope | Arduino **Programs**: Visual Studio Code | Unity | SolidWorks

Experience

UX Researcher/Developer | Private-Eye Lab   MAY 2024 – PRESENT
Blacksburg, VA
- Utilized **Unity** and **C#** to design and implement privacy mechanisms and scenarios for eye-tracking in augmented reality.
- Developed privacy-focused solutions through iterative prototyping, **enhancing user trust in data sharing by 16%** with eye-gaze logging integration.
- Conducted 25+ user studies, including developing testing protocols, managing sessions, and performing statistical analysis to validate the effectiveness of designs.

UX Researcher & Mentor | REACH CS Lab   FEB. 2024 – PRESENT
Blacksburg, VA
- Co-authored a **published paper** using LaTeX and Overleaf and **presented in front of hundreds** at an international conference.
- Conducted six in-depth interviews, implemented thematic coding to analyze 250+ lines of qualitative data, and designed participant recruitment initiatives, including partnerships with community leaders.
- Mentored students on qualitative and quantitative research methodologies, literature synthesis, and project development.

Projects

Facial Recognition Software | *HTML, CSS, JavaScript*   *github.com/nssim516/VTHacksJAN*
- Trained a custom dataset of 650+ images to improve facial recognition accuracy under varying lighting conditions.
- Integrated transfer learning using Google's Teachable Machine for real-time facial detection, displaying confidence scores to guide user adjustments.
- Designed and implemented a **system for facial recognition** tasks using 87% HTML for structure, with 2% JavaScript enabling interactivity and 10% CSS enhancing the user interface.

Bank System | *C++*   *github.com/nssim516/bank-system*
- Built a system with interactive features such as account creation, deposits, withdrawals, and transaction history tracking.
- Implemented password validation and error handling using predefined status codes.
- Structured the system with a focus on modularity and scalability, leveraging object-oriented principles to ensure easy future extensions and maintenance.

Solar-Powered Wi-Fi Extender | *Python, SolidWorks*   APR. 2024
- Modeled 3D prototype components (base, panels, balloon) on SolidWorks for easy assembly and efficient signal coverage.
- Collaborated in a team of 5 to evaluate and refine the design based on stakeholder feedback, considering efficiency and range.
- Worked with a team to develop a Python tool for calculating Wi-Fi extender deployment, including cost estimates, savings from bulk purchases, and interactive coverage maps.

Leadership

Corporate Liaison | National Society of Black Engineers (NSBE)   MAY 2024 - PRESENT
- Secured **$40,000** in funding through sponsorship acquisition for initiatives, trips, merchandise, and events.
- Managed financial operations through detailed **Excel** sheet and oversaw expenditures for 30+ corporate sponsors.

Peer Mentor | Center for the Enhancement of Engineering Diversity (CEED)   APR. 2024 - PRESENT
- Addressed and provided solutions and events for first-year engineering challenges faced by students.
- Guided 8 students personally in developing strategies and skills for navigating key engineering events and milestones.

Undergraduate Council | National Society of Black Engineers (NSBE)   SEP. 2023 – MAY 2024
- Coordinated various professional and social events for **250+ members**, bolstering community engagement and networking.
- Acted as liaison between companies and members, generating **$1,350 in funding** for events and initiatives.