Rodney Okyere

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Education

Virginia Tech   Aug 2023 – May 2025

M.S. Computer Science & Applications

- Advisor: Dr. Sang Won Lee
- Thesis: REACTING TO...: Understanding The Motivations, Participatory Culture, and Spectatorship Behind Reaction Videos
- Overall GPA: 3.52

B.S. Computer Science   July 2019 – May 2023

- Overall GPA: 3.65
- In-Major GPA: 3.39

Experience

Echolab at Virginia Tech - Blacksburg, VA

Graduate Research Assistant   Aug 2023 – May 2025

- Conducted thesis research titled "REACTING TO...: Understanding The Motivations, Participatory Culture, and Spectatorship Behind Reaction Videos," and successfully defended it.

Undergraduate Research Assistant   Aug 2021 – May 2023

- Developed "MultiTube," an interactive platform enabling users to view and manipulate multiple video streams simultaneously.
- Implemented the platform using HTML, JavaScript, Bootstrap, and YouTube's API, allowing users to search, add, and control videos.

Virginia Tech Department of Computer Science - Blacksburg, VA

Graduate Teaching Assistant (CS 2114: Software Design & Data Structures   Aug 2024 – May 2025

- Facilitated weekly office hours (3x per week, with additional sessions as needed), assisting students in debugging, understanding key programming concepts, and preparing for assignments.
- Led and supervised two weekly lab sessions, guiding students through hands-on projects and reinforcing lecture material, including topics such as linked lists, stacks, queues, and recursive algorithms.

Graduate Teaching Assistant (CS 2506: Introduction to Computer Organization II)   Aug 2023 – Dec 2023

- Facilitated weekly office hours and project help sessions, assisting students with core concepts including RISC-V assembly language, processor data path design, and memory hierarchies.
- Guided students in implementing assembly language programs and debugging software on Linux virtual machines.

Raytheon Intelligence & Space - Dulles, VA

Systems Engineering Intern   June 2023 – Aug 2023

- Managed virtualization products via VMware vSphere products: vCenter and ESXi.
- Resolved network-related connectivity and authentication issues for client machines to continue system productivity and success.
- Tested system-wide or minimal changes prior to implementation on system to ensure system configurations perform as expected.
- Maintained security appliances involving SIEM, firewalls, vulnerability scanners, DLP and Anti-Virus software to support program objectives.
- Performed system administration related objectives for Active Directory, Registry Editor, Windows Server Update Server (WSUS) and Group Policy Objects to meet DoD STIG requirements.
- Ensured the integrity and functionality of program files by performing routine maintenance and optimizations.
- Actively managed software packages, meticulously reviewing and executing file additions and removals according to project requirements.

Hardware & Infrastructure Engineering Intern May 2022 – Aug 2022

- Imaged physical servers and VMs with Red Hat Enterprise Linux (RHEL) and Windows Server 2012 R2.
- Analyzed ACAS vulnerability scans of large production environments to further patch and harden systems.
- Developed analytical skills to troubleshoot and configure servers.
- Managed virtualization products via VMware vSphere products: vCenter and ESXi.
- Maintained security appliances involving SIEM, firewalls, vulnerability scanners, DLP and Anti-Virus software to support program objectives.
- Performed system administration related objectives for Active Directory, Registry Editor, Windows Server Update Server (WSUS) and Group Policy Objects to meet DoD STIG requirements.
- Automated system workflows by creating PowerShell/Bash scripts.

Projects

PAER: Peer-AI Editing Repository Spring 2025
https://github.com/wooogler/paer
CS 6724: Advanced Topics HCI - Human-AI Interaction Final Course Project

- Collaborated on the development of a full-stack web application designed to streamline collaborative writing and peer editing through integrated AI assistance.
- Integrated OpenAI APIs (GPT-4o) to provide real-time, contextually-aware suggestions and analogies directly within the writing environment, significantly enhancing workflow efficiency.
- Built an interactive, three-pane user interface (React, Tailwind CSS) consisting of a structured navigation pane, an intuitive document editor, and an AI-powered chat pane for seamless contextual feedback.
- Conducted formative user studies through semi-structured interviews, validating user preferences and refining interface design for optimal usability.
- Employed MongoDB and Fastify for robust backend functionality, with deployment managed through Railway.

Music Diary Fall 2024
github.com/MusicDiaryDB
CS 5614: Database Management Systems Final Course Project

- Collaborated on the development of a music discovery and logging platform that allows users to log daily songs, generate personalized diary reports, and engage with a community of music enthusiasts.
- Implemented user authentication endpoints in the API backend using Python and Flask, enhancing system security and usability.
- Designed and built user-facing pages, including login, registration, and settings, using React and TypeScript for an intuitive interface.
- Integrated a PostgreSQL database via psycopg2, enabling efficient data management and seamless backend-to-frontend communication.

Online Learning Productivity Station Spring 2024
CS 5754: Virtual Environments Final Course Project

Inspecting Dynamics in Discord Communities Fall 2023
CS 5734: Social Computing and Computer-Supported Work Final Course Project

Disc.: Music Discovery Platform Spring 2023
https://disc-music.com/
github.com/Discovery
CS 4644: Creative Computing Studio Capstone Project

- Collaborated on the development of a web application, "Disc.," facilitating daily music discovery and community engagement through a "Song of the Day" feature inspired by BeReal.
- Engineered using ReactJS for the front end, Node.js for server-side operations, and MongoDB for data management, integrated with MongoDB Atlas on AWS.
- Integrated external APIs, including Genius, Spotify, and YouTube, to enrich user experience with comprehensive music data.

Project Fellowship Fall 2021
CS 3724: Intro to Human-Computer Interaction Final Course Project

Skills & Interests

Languages: Python, C, C++, C#, Java, JavaScript, HTML, Kotlin, SQL, LaTeX, Bash, RISC-V Assembly

Databases: PostgreSQL, MongoDB, Microsoft SQL Server

Software & Tools: Windows, macOS, Linux, Bootstrap, React, Docker, Flask, OpenAI API, Bootstrap, Git, Miro, Sonix.AI

Relevant Coursework: CS 6724: Advanced Topics HCI - Human-AI Interaction, CS 5754: Virtual Environments, CS 5734: Social Computing and Computer - Supported Cooperative Work, CS 5614: Database Management Systems, CS 5254: Mobile Application Development, CS 5114: Theory of Algorithms, CS 4644: Creative Computing Studio, CS 3724: Introduction to Human-Computer Interaction