Sivakumar Kunapuli

614-969-8555 | kunapulisiva03@gmail.com | linkedin.com/in/sivak-kunapuli | github.com/skunapuli03

Education

The Ohio State University — Columbus, OH
BS in ECE, Computer Engineering Track — *Graduation: May 2026*

Experience

Quantum Computing Research Assistant — May 2024 – Present
University of Cincinnati — *Cincinnati, OH*

- **Proof Development**: Analyzed and broke down complex proofs related to quantum computing algorithms, enhancing comprehension and facilitating further research.
- **Simulation in MATLAB**: Simulating quantum algorithms using MATLAB to validate theoretical findings and provide empirical support for research hypotheses.
- **Collaboration**: Working closely with a researcher to develop new quantum algorithms, contributing innovative ideas and solutions, Documenting research findings comprehensively, aiding in the preparation of a research paper

Deep Learning Research Assistant — March 2024 – Present
Prasath Lab @ CCHMC — *Cincinnati, OH*

- **Literature Review**: Conducted comprehensive reviews of current research papers in Generative AI and Deep Learning, staying abreast of the latest developments and methodologies.
- **Technical Mastery**: Advanced expertise in Generative AI models and deep learning techniques through rigorous self-study and discussions with lab members, contributing to a deeper understanding of complex concepts.

ECE Co-Op — Sep. 2023 – Dec. 2023
R&D @ Chamberlain Group — *Oak Brook, IL*

- **Real-Time Streaming**: Implemented real-time video streaming using FFmpeg, GStreamer, and ExoPlayer, achieving sub-second latency to enhance performance and user experience.
- **Server-Side Development**: Developed robust server-side code for hosting RTSP streams on Raspberry Pi 4 using Python, leveraging mediamtx for efficient media data management to optimize performance and scalability.
- **Notification System**: Engineered an advanced notification system utilizing Java/Android and MQTT communication services to trigger alerts when the doorbell rings, enhancing home security and user convenience.
- **Frontend Development**: Built and optimized the frontend of the Android app, ensuring a seamless user experience through intuitive UI design and efficient integration with backend services.
- **Cross-Functional Teamwork:** Collaborated with a multidisciplinary team of computer engineers, UI/UX designers, and industrial designers to develop and optimize an IoT Product, ensuring seamless integration of technical and design elements.

Projects

AI Integrated Task Manager | *React, Firebase, Next.JS, Node, MongoDB* — May 2024 – Present

- **Developed and implemented** a robust task management application using Next.js, React, and Generative AI Functionalities allowing personalized suggestions, task tracking with a calendar, goal setting, and journaling.
- **Engineered** backend with Node.js, Express.js, and MongoDB, ensuring scalability and optimal performance.
- **Utilized Firebase authentication** to secure user data and ensure seamless login and registration processes.

Alarm Webapp | *React, Node.js, Express.js , Firebase, Git* — April 2024 – May 2024

- **Architected** a full-stack web application using ReactJS for responsive user interfaces and Node.js with Express.js for robust API management.
- **Integrated** the Spotify API to enable intuitive song selection, leveraging advanced HTTP methods and URL path parameters for enhanced API customization.
- **Enhanced functionality** by integrating YouTube API, enabling users to select and play custom sounds for alarms directly from YouTube videos.
- **Integrated Firebase Authentication** to securely manage user authentication and authorization processes.

Technical Skills

Skills: Java, Python, C/C++, SQL , JavaScript, HTML/CSS, React, Node.js, Firebase, MATLAB, OOP, Algorithms

Relevant Coursework: Data Structures, C/C++, Digital Logic, Quantum Computing(observable student), Linear Algebra, Differential Equations, Multi-variable Calculus, Probability and Statistics