Karthik Sankar

⌂ kihtrak.com   KihtrakRaknas   /in/KihtrakRaknas   ✉ karthikandsankar@gmail.com

Education

University of Maryland   College Park, Maryland
Bachelor of Science in Computer Science and Mathematics   *Graduation: Dec. 2023*
University Honors citation, President's Scholarship, Dean's list every semester   GPA: 3.89/4.00
Data Structures, Computer Networks, Compilers, Machine Learning, Graph Theory

Experience

Mathworks: Software Engineering Internship *| MATLAB, C++, JavaScript, Scrum*   May 2023 - Aug 2023
- Improved customer workflows by implementing a preview feature for time-consuming code generation processes.
- Analyzed engineering trade offs to create a comprehensive system design to maximize maintainability and scalability.
- Prototyped child-oriented web interface for learning and writing MATLAB code.

UMD: Teaching Assistant *| C, MIPS Assembly, JavaScript*   Aug 2022 - Dec 2022
- Taught a range of topics including C programming, introductory systems programming, and assembly languages.
- Automated the collection of exit quizzes and attendance in class by creating QR Quiz.

Mathworks: Software Engineering Internship *| Perl, JavaScript, SQL, Git*   May 2022 - Aug 2022
- Developed internal infrastructure for authenticating with and querying the Microsoft Graph API.
- Implemented an interactive dashboard for filtering incident data and a RESTful API to support programmatic access.
- Replaced deprecated graphing utility and upgraded visualizations to vector images with custom downsampling.
- Refactored legacy CGI web application to use a modern model-view-controller based framework.

Code Ninjas: Instructor *| JavaScript, Node.js, Socket.IO, Firebase*   Feb 2019 - Aug 2021
- Authored and facilitated over 20 workshops about web development (with a heavy focus on JavaScript).
- Launched cloud_variables, an intuitive serverless cloud storage tool for novices to learn and implement persistent storage.
- Designed and maintained an internal dashboard tracking student metadata and their progress through the curriculum. Staff members used the dashboard to identify areas for improvement among students.

Activities

Engineers Without Borders *| React, Node.js, Plot.ly, Firebase*
- Constructed a real-time dashboard to visualize data and identify potential abnormalities in solar panel performance.
- Built a Node application that interfaces with a solar metering hub and uploads relevant data.
- Deployed metering software and conducted a survey for future improvements at an elementary school in Sierra Leone.

iCoSMoS Lab: Research Assistant *| Python*
- Engineered a system that allowed a network of nodes to range between themselves using ultra-wideband antennas.
- Created a process to simulate larger networks by interpolating data points between multiple experiments.

Projects

GradeView *| React Native, Node.js, Firestore, Puppeteer, Cheerio, Google Admob*
- Developed an Android and iOS application with over 2000 monthly active users.
- Enabled users to view their grades, calculate and predict future GPAs, take attendance, and contact classmates.
- Implemented an automated periodic web scraper capable of horizontal scaling using Node.js.

Clarity Blog *| React, Firebase RTDB, WordPress API, Google Analytics, Node.js*
- Constructed a responsive blog for a group of writers using React pulling from a headless Wordpress API.
- Optimized SEO performance using meta tags, Open Graph tags, alt text, and pre-rendered pages.
- Promoted engagement by automating Instagram posts and periodic email digests.

Technical Skills

Languages: JavaScript, Java, C, Python, Perl, C#, C++, Ruby, OCaml, Wolfram Language, MATLAB, Maple

Technologies: React, React Native, Node.js, Android Studio, Git, Firebase, Bootstrap, Unity