Kyle Kingsberry

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LINKS

https://kylek.tech, LinkedIn, Github

EDUCATION

Aug 2022 — May 2026 | **Aerospace Engineering, University of Maryland** | College Park

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EMPLOYMENT HISTORY

May 2021 — Aug 2021 | **Engineering Intern, Blue Origin** | Kent, Washington

- Played a key role in the development of advanced digital tools for structural testing in aerospace, honing expertise in 3D modeling and navigating high-security, mission-critical environments.
- Designed and developed a highly detailed digital replica of the New Glenn structural test setup using CREO, significantly enhancing testing precision, accuracy, and efficiency in evaluating critical aerospace components.

May 2023 — Mar 2024 | **Founding Developer & Devops Lead, OTOM AI**

- Spearheaded the design and execution of a cutting-edge AI platform, leveraging serverless architecture and asynchronous operations to deliver unmatched scalability and performance.
- Revolutionized deployment workflows by engineering an advanced CI/CD pipeline, automating deployments across AWS and Linux environments, reducing deployment times by over 80%, and bolstering system uptime.
- Architected a robust, platform-agnostic, event-driven backend, ensuring seamless scalability to support dynamic user demands and future product growth.
- Partnered with the founder to define a visionary product roadmap, aligning strategic goals with cutting-edge technical capabilities to drive innovation and market competitiveness.
- Successfully scaled the development team by leading recruitment, onboarding, and mentorship initiatives, cultivating a high-performance, collaborative engineering culture.
- Achieved a 10x reduction in vector embedding processing times, drastically optimizing data workflows and empowering real-time analytics.
- Conceptualized and implemented an autonomous email generation feature, enabling the OTOM AI agent to craft and send personalized emails with zero manual intervention, boosting user engagement and productivity.

Aug 2021 — Present | **Founding Developer, Digital Lifecycle 360**

- Pioneered the development of a real-time audio recording solution with zero-latency capability using WebSocket and WebRTC-driven technology.
- Established a solid backend infrastructure and streamlined deployment processes, collaborating closely with front-end developers to ensure seamless integration.
- Designed and developed a real-time, WebSocket-driven backend that facilitated zero-latency live audio recording sessions, enhancing user experience and productivity.
- Architected a relational database schema to maintain application state and support real-time data management efficiently.
- Established a CI/CD pipeline for automated deployments to Linux targets, streamlining updates and minimizing downtime.
- Collaborated closely with frontend developers utilizing the JUCE framework for C++, refining the WebSocket API and ensuring seamless integration of backend services.

Jun 2017 — Aug 2020 | **Junior Software Developer, Valboost** | Washington, D.C.

Developed cutting-edge software solutions to streamline internal operations and improve client functionality, with a focus on efficiency and usability for diverse stakeholders, including the State Department.

- **Optimized SharePoint deployment:** Engineered a custom installer using C# and CSOM, slashing installation times from 1-2 days to just 2-3 minutes, revolutionizing deployment workflows and reducing operational downtime.
- **Cross-platform healthcare app:** Designed and implemented a mobile application using Xamarin for C#, delivering seamless functionality across devices and improving user accessibility in healthcare settings.

- **Enhanced audit compliance:** Contributed to a custom SharePoint-based internal auditing solution for Buchanan & Edwards and the State Department, boosting compliance measures and fostering operational transparency.

PROJECTS

Aug 2024 — Sep 2024

Voyager

https://voyager-ai-obsidian.vercel.app

Developed and maintained the Voyager AI plugin for Obsidian, an interactive note-taking assistant designed to enhance user productivity through intelligent document retrieval and conversation capabilities.

Key Responsibilities:

- Plugin Development: Designed and implemented core functionalities, enabling fast vector-based document similarity searches and intelligent interactions within user vaults.

- User Experience Optimization: Conducted user testing and feedback sessions, iterating on features to improve usability and engagement within the educational environment.

Technologies Used:

- JavaScript, HTML, CSS
- Obsidian API
- Implemented Retrieval Augmented Generation (RAG)

Jan 2023

Airbrake Module for High-Power Rocketry

- Helped the UMD Rocket team design, build, and fly an airbrake module for their competition rocket at the spaceport america cup
- Designed, programmed, and tested Model-Predictive-Control algorithm for airbrake system which utilized a binary search method to find the optimal deployment angle for the current state of the vehicle. Able to converge on a solution within a matter of microseconds allowing the flight computer to run at 50Hz
- Collaborated with team-members who created Kalman filter to ensure that the control algorithm was fed accurate data
- Created groundstation application for providing an easy-to-use UI for viewing downlinked data during ground testing

Jan 2021

Skydiving Altimeter

- Designed, built, and programmed a custom altimeter system for use while skydiving
- This system utilizes commercially-available parts, and while the product that this was modeled after is sold for $350, my design costs only ~$30 in parts
- After extensive ground testing, I demonstrated trust in my work by going through many rounds of skydiving with the device to refine its design & user experience
- Fully open-sourced the design, which can be found at this repository
- (Work on current iteration began in January of this year, but there were several iterations before this)

Aug 2023

VTOL Hopper

- Designed and began construction of VTOL hopper, powered by an Electric Ducted Fan (EDF)
- Engineered thrust-vane system for directing the thrust-vector being output from the EDF
- Designed STM-32 based PCB for taking readings from LIDAR sensor, which will be used for aiding in guidance during final stages of landing
- Designed test stand for characterizing LIDAR sensor, writing initial flight code, and determining sensor limitations