Keith Chester

Senior Node.js and Full Stack Engineer

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Summary

Well-rounded solutions minded node.js engineer with a Bachelor of Science in Robotics Engineering. Technological polyglot with a career of unique projects designed in creating completely custom technological solutions.

Objective

To find fulfilling, challenging, and cutting-edge work that is enjoyed by and improves the day of many people.

Technologies

node.js	Typescript	Electron	AngularJS
Amazon Web Services	Docker	Python	Mocha + Chai
Linux	Heroku	Web Sockets	AVR Microcontrollers
Embedded Systems	C	Java	C#

Work Experience

Fusion Performance Marketing — Senior Developer — *2013 - Present*

Held numerous roles as their Digital Team defined its role in the company – from Developer to Research and Development Lead to Product Developer to Senior Developer

- As Research and Development Lead, looked into applying technologies such as BLE beacons, VR, AR, Computer Vision, and IoT to client-oriented solutions
- As a Product Developer, developed a re-usable microservice based backend for quicker deployments and white-labelling of products, a white-label-able projects such as a zoom-able half-mile selfie, video/gif selfie booths, small interactive games, and more
- Was depended upon making any weird request or requirement work, and figuring out how to make it work well

Fusion Performance Marketing Project Work

CORE + REACTOR – MICROSERVICES FOR FUSION MARKETING

- Created Core with the goal of creating easy to use HTTP-based microservices for other developers at Fusion, speeding up our already rapid application development timelines
- Core would parse headers alone, authenticate and authorize requests through Can They (an open source module I developed), and stream the request and resulting response to and from the intended service
- Microservices were ran in Docker containers and used Consul for service discovery by Core
- Reactor was an administrative console and consumer data store designed for multiple clients and reporting

- Powered many applications and products for years

GIGASNAP

- Created a white label brand-able product that would create dynamic zooming selfies from up to a half mile away | https://bit.ly/2Kk8j6m
- Experimented with ZigBee wireless radio networking tools to allow a tablet Electron app to control the cameras from a great distance
- Automated Adobe After effects, AWS Video Transcoder service to deliver final product to consumer

LAUNCHPAD

- Fusion regularly deployed dozens of tablets across multiple clients for simultaneous activations with custom software built for each client. Maintaining each tablet with the appropriate software and most recent version became a confusing problem for developers.
- Launchpad is a series of node.js powered tools (a server, command line interface (CLI), and electron app) streamlining the deployment and update process of Fusion's site-deployed applications
- The Launchpad CLI streamlined updating, packaging, and publishing applications, as well as assigning which tablets received which applications
- The Launchpad electron app is installed on each tablet, constantly phoning home for assigned versions of applications. It automatically downloads, installs, keeps updated, and creates shortcuts for all custom client software

MARRIOT INNOVATION WALL

- Worked on a team to create the technology for an interactive wall that toured the world for Marriott Hotels | https://bit.ly/2FmuCo2
- Created a heartbeat-controlled music player and light controller
- Used conductive paint to change a projection mapped surface through Unity
- Utilized infrared cameras and computer vision to perform hand tracking for projection mapping on a geodesic surface in Unity

AND MORE...

- Dozens of custom electron applications and websites
- Solo created and maintained sale reward program for Anheuser-Busch sales associates
- Office wide RFID controlled Chromecast'ed Nerf War | https://bit.ly/2FmwYmS
- ...and many more

Hub City Media

Application Developer *2009-2013*

- Led teams (including overseas developers) in developing customized solutions for Sun Microsystems and Oracle identity management products
- Created, updated, and maintained several enterprise Java and C# applications in large industries including finance, healthcare, and government contractors.

Open Source and Personal Projects

All projects listed below can be found on my Github profile for the user *hlfshell*

SERIAL-SYNAPSE

- Before serial-synapse no library allowing node.js to take control of one or several embedded microcontroller devices while still allowing the device to have time-critical response with local code execution | https://bit.ly/2JyHJow
- Created serial-synapse to handle asynchronous communication between and generate a dynamic API for easier programming of hardware through node.js
- This module powered dozens of projects throughout Fusion Performance Marketing
- Created serial-synapse-socket that takes a generated dynamic API and exposes it through sockets, for instant IoT-ification of a project | https://bit.ly/2HC2tzu

CAN THEY

- While building Core to control microservices at Fusion, there was no flexible lightweight library for ACL controlled permissions | https://bit.ly/2KmUbsY
- An authorization (not authentication) ACL versus JSON checker for node.js
- Optional built in express middleware for easier, cleaner inclusion into express applications

NEEDLE-SWAP

- Unit testing with mocking modules in node.js was difficult without heavily changing coding styles – to combat this needle-swap was created | https://bit.ly/2HAcBsl
- Easier node.js object mocking via overwriting the require function to hot-swap mocked objects in

MQTT-SCHEDULER

- During a binge of automating various household areas, there was a discovered need to incorporate scheduling and interval MQTT responses | https://bit.ly/2JDrOoW
- node.js command line tool for scheduling MQTT broadcasts at set times or intervals
- Was used during my briefly lived home automation binge, powering lights, automated gardening tools, and more

LIFX-MQTT

- node.js command line tool for exposing UDP controllable LIFX Wi-Fi light bulbs to an MQTT network | https://bit.ly/2HzG05S

AND MORE...

- DIY thermal camera w/ tablet app for people counting
- Raspberry Pi MMS picture doorbell due to a lack of a door peephole
- Slackbots that control IoT RGB LEDs underneath desks or notify users of nearby Pokemon in Pokemon Go

Education

Bachelors of Science in Robotics Engineering **2005 - 2008**

Worcester Polytechnic Institute (WPI)