Josh Hickman

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EXPERIENCE

Software Engineer

Sick, USA August 2018 - Present, Stoughton, Massachusetts

• Developed reliable distributed real-time control systems in **C++** and **Lua**, processing **100,000's** of packages daily for logistics.  
• Crafted **RESTful APIs** to manage shipping manifests for customers with **Java** and **Spring** to service **1000's** of requests daily.  
• Reduced operational costs by integrating **Docker** with **Jenkins** on **Windows** servers to build **C++** applications for **Linux** releases.   
• Created a **C# WPF** application interfacing with an **Allen-Bradley PLC** over **Ethernet IP** to scale with micro-controllers.  
• Architected scalable cloud solutions for camera tunnel monitoring systems with **Amazon Web Services** (**S3**, **CloudFront**, **IoT Core**, **SNS, DynamoDB**) using **Node.js** and **Docker**.

PROJECTS

DIY IoT Home

Open source smart home solution complete with security cameras, a control pad, and an IoT hub cluster. • December 2019 - Present

• Retrained Facenet with personal facial embeddings to distinguish potential intruders using **Python**, **Tensorflow**, and **Keras**.   
• Designed **RESTful API** microservices in **Node.js** with **Express.js** to interface IoT devices with a central hub.

• Architected an **ARM Kubernetes** cluster running **NGINX** ingress load balancing to scale the hub for more IoT devices.   
• Integrated **Amazon S3** and **SNS** for notifications of home activity and uploads of video surveillance for real-time alerts.

Elastic Visitor Analytics

Analytics of Amazon CloudFront visitor access of personal website using the MapReduce framework. • November 2019

• Performed distributed batch processing of **CloudFront** access logs using **Amazon EMR** clusters with **Java** and **Hadoop**.  
• Transformed processed records from **S3** to **RDS MySQL** for ease of analysis using **Lambda** with **Node.js**.   
• Created a user-authenticated visualization portal with **React** and **D3.js** using **Cognito**, **Lambda**, **API Gateway**, and **AWS Amplify**.

AI Arena

Browser-based games with AI opponents that improve as you play using Tensorflow.js. • January 2020 - Present

• Markdown content generation  
• Hosted on AWS  
• Migrated to AWS Amplify framework to take advantage of continuous integration/continuous delivery

CERTIFICATIONS

Developer Associate

ID: R20KJ5FCEFBQQMGD • Amazon Web Services • November 2019 - November 2022

Solutions Architect Associate

ID: TTZ26Q1CMNFQ1D3N • Amazon Web Services • October 2019 - October 2022

EDUCATION

Bachelor of Science in Computer Science

University of Tennessee, Knoxville • Knoxville, Tennessee • August 2014 - May 2018 • GPA: 3.23/4.00

SKILLS

Languages: C++, Python, JavaScript, Lua, Java

Frameworks & Libraries: Node.js, React, Express.js, OpenCV, Keras, Tensorflow, Boost, Spring, Hadoop, ZeroMQ

Systems & Databases: Windows, Linux (Ubuntu, Red Hat), MacOS, Raspberry Pi

Systems & Databases: MySQL, PostgreSQL, MongoDB, DynamoDB

Tools: Amazon Web Services, Microsoft Azure, Git, Docker, Maven, Jenkins, CMake, Subversion