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Tim Reynolds

Software Engineer

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Skills

- **Languages** - JavaScript, TypeScript, NodeJS, HTML, CSS, SQL, Python, C, C++, C#, Rust
- **Frameworks & Libraries** - React, MUI, Redux, Next.js, NextAuth, AngularJS, Express, Zod, Zustand, Knex, React Testing Library, Jest, PostgreSQL, MongoDB, Flask, Django, .NET, FreeRTOS, cv2, numpy
- **Tools** -, Linux, VS Code, Git, GitHub, GitLab, Google Cloud Platform, AWS, GraphQL, REST, MQTT, JSON, JWTs, Docker, Kubernetes, ElasticSearch, Figma, Agile, Scrum, OpenAPI, Oracle Cloud, Android Studio, ArcGIS, WebSockets, Microcontrollers, HMIs, PLCs, Jira, Confluence, KiCad, Multimeters, Soldering, Fusion 360

Experience

Plus One Robotics - *Web Development Intern* 04/2023 - 08/2023

San Antonio, TX

- Executed precise implementation of frontend and backend features into **Yonder**, a remote supervision app integrated with 100+ industrial robots. Adhered rigorously to **Figma** mocks and **OpenAPI** documents, employing a robust stack: **React**, **MUI**, **TypeScript**, **Redux**, **Zustand**, **Express**, **Zod**, **PostgreSQL**, **Knex**, and **GraphQL**.
- Spearheaded the conversion of the API gateway from **GraphQL** to **REST**, reducing average load times by **~90%**. Constructed a new **Docker** image in **GCP**, an **Express** server, authentication-related endpoints with **Knex** and **JWTs**, and **ElasticSearch** indices.
- Boosted testing coverage to over **80%** by authoring unit and integration tests using **Jest** and **React Testing Library**.
- Optimized the **GitLab CI/CD pipeline** by updating the unit testing and SAST stages to support a monorepo layout, achieving **~90%** reduction in build times.
- Revamped an application using **Google App Engine** and a **third-party API** for Vestaboard updates, upgrading it from **JavaScript** to **TypeScript** and refactoring code to enhance readability and maintainability.
- Configured and implemented tags and data types in a **PLC** using **Logix Designer**, facilitating seamless data streaming to an **HMI** frontend through a **WebSocket**.
- Developed a **Bash** script to automate the extraction of HMI error codes, messages, and priority levels from a CSV file, transforming them into a **JSON** format tailored for seamless integration into the web app frontend.
- Regularly maintained and updated **NodeJS** packages, meticulously reviewing **documentation** and conducting thorough **testing** to identify and address any potential breaking changes.
- Collaborated with fellow developers to strategize and enhance **features**, facilitated routine **code reviews**, engaged in **pair programming** sessions, and provided **mentorship** to onboard a new DevOps Engineer in mastering the codebase.
- Actively participated in a **Scrum** environment with daily standups, offering and incorporating feedback to foster **continuous improvement**.
- Orchestrated and delivered insightful presentations on work progress during monthly **company-wide demo days**.

Projects

ATmega328P Thermometer 08/2024 - 09/2024

- Engineered a digital thermometer using an **Arduino Uno**, **C++**, **FreeRTOS**, and a temperature sensor, enabling precise real-time temperature monitoring with a custom-built device.
- Designed and fabricated a **PCB** in **KiCad** to streamline the assembly process, optimizing the layout for efficient component placement and signal integrity.
- Assembled and **soldered** components onto the **PCB**, achieving a functional prototype with reliable temperature readings and robust performance.

Air Quality Monitor 12/2023 - 02/2024

- Programmed an ESP32 microcontroller in **C++** to stream air quality sensor (**I2C**) and GPS (**UART**) data to **AWS DynamoDB** via **AWS IoT Core**, **MQTT**, and a **PubSub** topic.

German Rail Travel Website 01/2023

- Developed a dynamic web application showcasing all German train stations reachable within a specified time limit, achieving functionality and elegance in ~1000 lines of **React**, **MUI**, and **Redux**.
- Implemented a **CI/CD pipeline** using **Docker**, **GitHub**, and **Google Cloud**.
- Designed a sophisticated **recursive algorithm** to extract a comprehensive list of station names, photos, and route details from an **API**.

Exercise Identifier 12/2022

- Engineered the backend of a computer vision-powered web application using **Python**, **Flask**, **cv2**, and **numpy** to detect six body weight exercises with 85% accuracy through a custom pose detection algorithm.
- Optimized backend processes to analyze image uploads and deliver real-time exercise identification results to the frontend, contributing to the successful delivery of a team project in a computer vision class.

Survey Application 01/2022 - 12/2022

- Pioneered the design, documentation, and implementation of a survey platform frontend in ~1600 lines of **React**, covering survey creation, autosaving, deployment, and result visualization.
- Played a pivotal role in refining and debugging **SQL schema**, **APIs**, **Python Flask** functions, and **Oracle Cloud** deployment, slashing the number of API calls by **50%**.
- Collaborated with the team to strategize and document the project using **Jira** for task management and **Confluence** for comprehensive documentation.

Microcontroller Video Game 04/2020 - 05/2020

- Innovated a **C/C++** first-person shooter on an ARM Cortex TM4C123 microcontroller, featuring a dynamic 'move' phase and challenging 'zombie' phase with randomly generated targets.
- Authored comprehensive **technical documentation** detailing design requirements, hardware and software implementation, and testing processes.

Education

Bachelor of Science in Electrical & Computer Engineering 08/2019 - 12/2022

The University of Texas at Austin

GPA - 3.86 / 4.00

Certificates

IBM - *Full Stack Software Developer Professional Certificate* 2024

Udemy - *Complete C# Masterclass* 2023

Activities and Accomplishments

Longhorn Quiz Bowl Team - *Member* 08/2020 - 05/2023

T.W. Whaley, Jr. Friends of Alec Endowed Scholarship - *Recipient* 08/2019 - 12/2022