Brian Fitzgerald

Software developer passionate about building great user experiences, solving interesting problems, and finding new technologies to learn.

PERSONAL DETAILS

Location	Columbia, MO / Remote
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GitHub	https://github.com/brianfitzgerald

WORK EXPERIENCE

Senior Software Engineer, Robotics   2021 - 2022
EquipmentShare

- Developed and maintained a distributed simulation environment for testing and developing autonomous construction equipment, including a highly performant LIDAR simulator and test scenario generator.
- Worked on various computer vision tasks for an autonomous construction system, including filtering and segmentation of LIDAR and image data.
- Developed a pipeline for the recording and replay of sensor data from the robot, including a real-time visualization system for reviewing detections.
- Designed and implemented a custom video streaming solution intended for low-bandwidth use, streaming video from the robot's cameras to a remote client, as well as local services.
- Assisted a team of interns in developing a custom depth estimation and segmentation system for obstacle detection from video data.

Senior Software Engineer, Elogs   2019 - 2021
EquipmentShare

- Worked on expanding support for the ELD compliance system, which gave real-time alerts for FMCSA guideline violations to thousands of drivers.
- Used Flask-REST and SQLAlchemy to create a REST API for the ELD compliance system.
- Maintained the React Native and TypeScript - based iOS and Android Elogs app, which served a wide range of mobile devices and trackers.
- Coordinated with other teams within the company to expand DOT regulation support across multiple products.
- Maintained a front-end and API for fleet managers to manage their drivers in React and TypeScript.
- Worked to overhaul the backend interview process for the engineering organization.

Software Engineer   2016 - 2019
CARFAX

- Led the design and implementation of a serverless queue system written in **Golang** for sending 100,000s of emails per day.
- Migrated myCARFAX's on-premises services to an **AWS**-managed, **Kubernetes**-based infrastructure.
- Assisted with the myCARFAX Shop Data Gateway, a solution for caching millions of items in **ElastiCache/Redis** and exposing them via a GraphQL API.
- Designed and implemented an automated screenshot testing system to identify and alert for visual regressions using **AWS Lambda** and image processing.
- Led the development of the CARFAX Service Shops application, written in **React / Node / Typescript**, which is used by 1,000s of customers daily.

Developer   February 2018 - January 2019
InteraXon Inc

- Developed the CES demo experience for the MUSE 2 by Interaxon, an AR experience that allows users to try out a virtual version of the headset and explore its features. Built in **Unity** with **ARKit**, utilizing face detection and masking.
- Was later deployed in demo kiosks in California, and integrated into InteraXon's marketing material.

Developer   September 2018 - February 2019
Healium XR

- Designed and developed several AR experiences for assisting with meditation in **Unity** with **ARKit** and **ARCore**, targeting mobile devices and the Oculus Go headset.
- Built a dashboard and analytics platform for tracking biometric data. Used **AWS Cognito** for authentication and **Lambda and DynamoDB** for the backend.

Developer   June 2017 - May 2018

GeneTrait Laboratories

- Developed the MedTrait reporting system for GeneTrait.
- Developed a backend service to generate genetic testing reports with **Node / Express**, as well as a component library in **React and Typescript** to render the reports.
- Was involved in the entire product development cycle, including designing features and developing a user experience and visual identity.

Developer   Oct 2015 - Jun 2016

QuarkWorks

- Worked on a variety of native mobile applications, including ZephyrCharts, an aviation mapping application for pilots. This involved developing **native iOS and Android clients** for each project.
- Developed the companion app for Columbia's local Roots n Blues festival, as well as a backend for managing user data in **Google Cloud**.

Software Developer   Feb 2014 - Sep 2015

WireCloud, LLC

- Worked on various contracting projects including the backend for a local food delivery service. Built a system for managing a stream of orders, and assigning them to drivers, as well as a customer-facing order tracking system.
- Developed a companion mobile web application for drivers.

SKILLS AND TECHNOLOGIES

Frontend	TypeScript, React, Redux, MobX, Webpack
Vision	PCL, Tensorflow, Pytorch, OpenCV, OpenGL, Unity
Robotics	C++, Rust, ZeroMQ, Protobuf, ROS, Waymo Honeycomb
Backend	Express, Golang, Terraform, Kubernetes, Helm, Jenkins, Docker
AWS	SQS, CloudFront / S3, ECS, Lambda, Cognito
Mobile	Swift / iOS, Android SDK, SceneKit
XR	Unity, C#, ShaderLab, ARKit / ARCore, SteamVR SDK