David Hacker

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO | BS Computer Science — La Jolla, CA | June 2021

EXPERIENCE

MYGOLFFAVES | Application Developer — June 2017 – Sep 2017

- Using React Native, created iOS and Android apps for MyGolfFaves, a golfing rewards/discounts company

BLINKS | Full Stack Developer — July 2016 – Jan 2017

- Improved the resource demands and efficiency of the Android app for Blinks, a company that used Eddystone beacons to broadcast information about retail stores and their wares
- When Blinks pivoted to being a subscription service for iOS stickers, I designed a functional backend to hold all of their stickers. Used the MEAN stack, mLab, Amazon S3 for image storage, and Cloudfront.

INDIEU | Full Stack Developer — Mar 2016 – Aug 2016

- Redesigned the website for IndieU, a music sharing company. Involved numerous layout changes and required knowledge of the MEAN stack.

SKILLS

Proficient in	Java, Python, C++
Backend	MEAN stack, Django, Flask, Golang, Firebase
Frontend	HTML, CSS, Javascript, Bootstrap, Material Design, React Native

PROJECTS

PHOTOREALISTIC RENDERING ENGINE | Java — github.com/dmhacker/RenderingEngine

Ray tracer with configurable options for a variety of features: vertex normal interpolation using barycentric coordinates, Phong shading, ray reflection & transmission, balanced k-d tree generation, camera rotation, and anti-aliasing

TEXT COMPRESSION EXPERIMENTS | Python — github.com/dmhacker/yatc

Custom compression algorithm combining existing designs: Burrows-Wheeler transform, move-to-front transform, run-length encoding, Huffman encoding

ALEXA YOUTUBE SKILL | Node.js, JavaScript — github.com/dmhacker/alexa-youtube-skill

An unpublished skill that lets Amazon Alexa devices play audio from YouTube videos

AWARDS

1ST PLACE @ STARTUP WEEKEND CONEJO VALLEY 2017 Mar 2017 | Camarillo, CA

Our company, Field Vitals, used Semtech's LoRa technologies to produce concise temperature, pH, humidity, and soil moisture readouts to maximize crop nutrients yield for large scale farmers. We won under the Agriculture category.

HONORABLE MENTION @ SIAM M3 CHALLENGE Mar 2017 | Westlake Village, CA

I designed a crucial regression algorithm using a Fourier series approximation, helping net our team an honorable mention (awarded to the top 8% of teams); implemented the algorithm in Python using matplotlib and numpy; and automated data collection/processing for other parts of the challenge.

3RD PLACE @ MIT ZERO ROBOTICS 2015 Jan 2016 | Cambridge, MA

My team went the finals hosted at MIT and ended in 3rd place out of nearly 200 international teams. Additionally, my code was run aboard the International Space Station (ISS). I designed four winning strategies for each phase in C++ and taught and directed other members of the team.