

# David Hacker

dmhacker@yahoo.com | (805) 368-5071 | Thousand Oaks, CA | [github.com/dmhacker](https://github.com/dmhacker)

## EDUCATION

**UNIVERSITY OF CALIFORNIA, SAN DIEGO** | BS COMPUTER SCIENCE

La Jolla, CA | June 2021

## EXPERIENCE

**INDIEU** | FULL STACK DEVELOPER

Westlake Village, CA | Mar 2016 – Aug 2016

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

**BLINKS** | FULL STACK DEVELOPER

Westlake Village, CA | 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.

**MYGOLFFAVES** | APPLICATION DEVELOPER

Westlake Village, CA | June 2017 – Sep 2017

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

## SKILLS

PROFICIENT IN	Java, Python, C++
BACKEND	MEAN stack, Django, Flask, Golang, Firebase
FRONTEND	HTML, CSS, Javascript, Bootstrap, Google Material Design

## PROJECTS

**PHOTOREALISTIC RENDERING ENGINE** | JAVA

[github.com/dmhacker/RenderingEngine](https://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](https://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](https://github.com/dmhacker/alexa-youtube-skill)

An unpublished skill that lets Amazon Alexa devices play audio from YouTube videos

## AWARDS

**HONORABLE MENTION: SIAM M3 CHALLENGE** MARCH 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

**INTERNATIONAL FINALIST: MIT ZERO ROBOTICS 2016** JANUARY 2017 | CAMBRIDGE, MA

See the 2015 version of this award for more details.

**INTERNATIONAL FINALIST: MIT ZERO ROBOTICS 2015** JANUARY 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