

# David Hacker

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## EDUCATION

2017 – 2021 **Computer Science**  
BACHELOR OF SCIENCE, 4.0  
UC San Diego

## WORK EXPERIENCE

JUNE 2017 – SEPT 2017

MyGolfFaves

### *Application Developer*

- Created iOS and Android apps for MyGolfFaves, a golfing discounts company, using React Native.
- Coordinated production of the backend API routes to link with the frontend.

JULY 2016 – JAN 2017

Blinks

### *Full Stack Developer*

- Improved the resource demands and efficiency of Blinks Android app.
- Created a backend to support Blink's iOS sticker subscription service using the MEAN stack, mLab, Amazon S3 and Cloudfront.
- Designed a corresponding admin panel.

MAR 2016 – AUG 2016

IndieU

### *Full Stack Developer*

- Redesigned the website for IndieU, a music streaming service for college students, involving numerous layout changes.
- Performed routine server management, overseeing the two Amazon EC2 instances running IndieU's platform.

## SOFTWARE SKILLS

LANGUAGES	Java, Python, JavaScript, C++, HTML, CSS, SQL, $\LaTeX$
FRAMEWORKS	MEAN stack, Flask, Firebase, React Native, Materialize, Bootstrap

## PROJECTS

SUMMER 2017

NodeJS, AWS Lambda, Heroku, FFmpeg

### *Alexa YouTube Skill*

- Created a skill that lets Amazon Alexa devices play audio from YouTube videos.
- Wrote detailed instructions allowing ordinary users to set it up.
- Platform has over 200 downloads and was reviewed by the German tech channel Venix, which has over 10,000 subscribers.

SPRING 2017

Python, Linux

### *Omega2 System Utilities*

- Developed a custom monitor for the Omega 2+ computer, which displays network usage; total upload & download payloads; instantaneous upload & download speeds; and device uptime.
- Converted the board's LED to a rainbow display.

SUMMER 2016

Python

### *Text Compression Experiments*

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

SPRING 2016

Java, Swing

### *Photorealistic Rendering Engine*

- Created ray tracer with various configurable features: vertex normal interpolation, Phong shading, ray reflection & transmission, camera rotation, and anti-aliasing.
- Implemented k-d tree structure to quickly detect ray-object collisions.
- Ran several threads in parallel to speed up image generation.

## HONORS & AWARDS

AUG 2017	Eagle Scout Award
APR 2017	1st Place: Startup Weekend Conejo Valley 2017
MAR 2017	Honorable Mention: SIAM M3 Challenge (top 8% of teams)
SEPT 2016	National Merit Finalist
JAN 2016	3rd Place: MIT Zero Robotics 2015