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

Fall 2017

Python, Gensim, Keras, Flask
Review Rating Scorer

- Developed algorithm to convert product reviews to product ratings on a scale from 0 to 5.
- Used the word2vec algorithm in Gensim to process textual semantics.
- Trained a deep neural network in Keras to convert word vectors to review classifications.
- Ran models behind a Flask microserver to keep them in memory.

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.

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