David Hacker

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EDUCATION

BS Computer Science June 2021
University of California, San Diego, La Jolla, CA

WORK EXPERIENCE

Software Consultant March 2016 - Present
Pinnacle Coding, Westlake Village, CA

- Redesigned the website for IndieU, a music sharing company. Involved numerous layout changes and required knowledge of the MEAN stack.
- 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.
- 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: Recursive Ray Tracer *Java* https://github.com/dmhacker/RenderingEngine
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* 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* 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An unpublished skill that lets Amazon Alexa devices play audio from YouTube videos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.