

David Hacker

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Education

- **University of California San Diego** **La Jolla**
B.S. Computer Science, 4.0 *2017–2021*

Work Experience

Positions Held.....

- **Medspace** **La Jolla**
Software Engineering Intern *Oct 2017–Present*
 - Developed a tester application using Xamarin Forms that tracked team member locations
 - Designed a patient-to-nurse matching algorithm that helped secure funding for the company
 - Worked in an Agile development environment to implement my algorithm in a .NET core backend
- **Blinks** **Westlake Village**
Full Stack Developer *Aug 2016–Jan 2017*
 - Added multi-threading to Blink's Android app to improve performance when tracking Eddystone beacons
 - Created a backend for Blink's iOS sticker subscription service using Heroku, mLab, and Amazon S3
 - Designed a corresponding admin panel using Materialize so that artists could add stickers to the site
- **IndieU** **Westlake Village**
Full Stack Developer *Mar 2016–Aug 2016*
 - Redesigned IndieU's website and improved site SEO, driving traffic up by nearly 20%
 - Improved their music streamer by optimizing song file delivery
 - Fixed issues with their onboarding process, allowing users to save their profile and enter information later

Notable Projects.....

- **Alexa YouTube Skill:** *NodeJS, AWS Lambda, Heroku, FFmpeg*
 - Created a skill that lets Amazon Alexa devices play audio from YouTube videos
 - Downloaded over 1000 times and has over 50 stars on GitHub
 - Reviewed by the German tech channel Venix, which has over 10,000 subscribers
- **The Triton Newspaper:** *Python, Flask, Bokeh, Pandas, Heroku*
 - Spearheaded the analytics platform for The Triton newspaper
 - Helped editors & writers evaluate their performance by displaying readership metrics in a clean, understandable manner
 - Created a Slack bot that notifies editors when their articles have been moved around in Trello
- **Parallel Rainbow Tables:** *Rust, Crossbeam, Serde*
 - Developed a fast & parallel implementation of rainbow tables, used in cryptanalysis to reverse hashes
 - Able to iterate through nearly 1 million MD5 hashes in under a millisecond using only CPU power
 - Exposed a clean API that makes it easy for other developers to crack different hashing functions
- **Photorealistic Rendering Engine:** *Java, Swing*
 - Created a ray tracer that can show light refraction and reflection
 - Detected ray-object collisions quickly using a k-dimensional tree structure
 - Ran several threads in parallel to speed up image generation

Technical Skills

- **Languages:** Rust, Java, Python, JavaScript, C++, C, C#, \LaTeX
- **Frameworks:** MEAN stack, Flask, Firebase, React Native, Xamarin, Materialize, Three.js