MATTHEW ALLEN

SOFTWARE ENGINEER

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PROJECTS

BrownBananas (Ruby on Rails, React.js): **LIVE | GitHub**

A single-page movie review web application inspired by RottenTomatoes

- Responsive design optimizes user experience for narrow browsers, tablets, and mobile devices
- Ensures maximum database security by implementing 4 separate checks (3 on front-end, 1 on back-end) so that only an admin user can add, delete, and make changes to stored movies
- Customized multi-table query methods provide efficient data retrieval, leading to an easily scalable product
- Allows users to dynamically view all reviews for each movie while maintaining a slim show page using React-Paginate and Ruby's Kaminari

MusicTiger (Node.js/Express.js, React.js): **LIVE | GitHub**

Music video themed website rendering the most recently released and popular videos

- Uses Google/YouTube's iFrame and Data API to fetch and render YouTube videos
- Responsive design optimizes user experience for narrow browsers, tablets, and mobile devices

Langton's Ant (Javascript, HTML, Canvas): **LIVE | GitHub**

Interactive visualization of Langton's Ant, turing machine with a very simple set of rules that produce complex results

- Customized algorithm for remapping slide-bar input into appropriate visual representations
- Improves upon original concept by allowing for multiple ants and a multi-color option

Automated Stair-Climbing Wheelchair (San Jose State Mechanical Engineering Department) **Images**

An automated stair-climbing wheelchair designed and manufactured for supporting a 200-lb individual up/down a set of stairs

Programming Lead, Mechatronics Lead, and CAD Designer (August 2012 – May 2013)

- Successfully built a prototype that climbed a set of 8 steps
- Led efforts for all mathematical analyses and all mechatronic aspects, including motor sizing, motor selection, power control, programming (in Arduino), circuitry, battery selection, and power interfacing
- Fundraised over $1,000, which included delivering a funding request presentation to ASME

KEY SKILLS AND KNOWLEDGE AREAS

- Programming technologies: **Ruby, Rails, Javascript, React,js, FLUX, Node.js, jQuery, SQL, HTML, CSS, Git, AWS**
- Excellent mathematical abilities: (770/800 on SAT and SAT II), 5/5 on all AP Calc tests

EDUCATION

App Academy (April 2016) – New York, NY

- Rigorous 1000-hour web development bootcamp with <3% acceptance rate
- Teaches full-stack development in Rails, SQL, JS, React, TDD, and algorithms with best coding practices

San Jose State University (December 2013) – San Jose, CA

- Bachelor of Science in Mechanical Engineering; concentration in Design

WORK HISTORY

Restoration Robotics – San Jose, CA

RR is the manufacturer of the groundbreaking ARTAS hair restoration robot, the only robotic hair restoration system on the market.

Sustaining Engineer (May 2015 – October 2015)

- Lead projects that resolve product technical issues and improve manufacturability
- Improved manufacturing documentation by translating 200+ 2D AutoCAD sketches into 3D models in Solidworks
- Wrote root cause analysis reports, test protocols, and test reports to verify and validate new designs and design changes
- Designed and built test fixtures utilizing a 3D printer, lathe, and mill, to ensure product reliability before production release

Varian Medical Systems – Palo Alto, CA

Manufacturing Engineering Intern (August 2013 – June 2014)

- Performed product-development for medical system technologies, including X-ray and oncology devices.
- Integral part of team that earned VMS's Truebeam its CE mark, allowing it to be sold throughout Europe
- Collaborated daily with manufacturing engineering team on RoHS Initiative project, which involved ensuring all Varian-used parts do not contain Lead, Mercury, Cadmium, or Hexavalent Chromium in them. Analyzed and addressed compliance for over 50,000 parts