

JUSTIN BLACK

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EMPLOYMENT

Senior Mechanical Engineer, Electric Motorcycles

Alta Motors

May 2015 - Oct 2016

- Spearheaded development of Python script which ensured that two databases were in agreement with each other, reduced/eliminated quality escapes from engineering to manufacturing
- Eliminated fit problems by updating model+drawings on 196 parts, ~ 33% of the motorcycle
- Precisely and safely tested and analyzed tightening torques on 151 bolted joints, ensuring a safe customer experience
- Developed and implemented solutions which eliminated part cracking and bolt loosening bugs

Mechanical Engineer, Helicopter Engine Parts

General Electric Aviation

July 2007 - Aug 2014

- Wrote Fortran/ADPL programs to automate analysis and find the optimal part design in a part weight vs part life graph
- Co-led design of a high pressure compressor stator module while also building a large analysis model of the engine, two heads of engineering work
- Led planning for \$1 million tech development program to produce metal parts which last longer and save weight
- Excelled at technical reviews and team coordination, achieving near perfect scores at my design reviews and working closely with members on agile 15 person teams

EDUCATION

AppAcademy, 2017

Coding Bootcamp - 1000 hour curriculum, 80 hour weeks

Tufts University School of Engineering, Medford, Ma
B.S., Mechanical Engineering, 2007

TECHNICAL SKILLS

Ruby, Rails, Javascript ES6, React-Redux, Python, Django, HTML5, CSS3, SQL, AJAX, SASS, jQuery, RSpec

PROJECTS

Wiigo A website to create and join clubs [live](#) | [github](#)
(React/Redux, Ruby, Rails 5, AJAX) Frontend+Backend

- Provided beautiful and functional frontend experience with a CSS flexbox layout
- Utilized RESTful API to deliver performance, scalability, and simplicity
- Deployed images with Cloudinary CDN; serves images more quickly and efficiently than the backend
- Protected site against backend incursion with user authentication and password hashing

Devise A mobile app to find events in SF [live](#) | [github](#)
(JavaScript React Native/ HTML5 Canvas) Backend Developer

- Developed robust event scraping with Python BeautifulSoup
- Minimized backend scraping queries by allowing events remain fresh for one day
- Recorded the user's event choices for future analytics

Pycalculix A python library to stretch metal parts [live](#) | [github](#)
(Python, matplotlib, scipy) Library Developer

- Developed robust classes to import/export data to industry standard solvers and meshers
- Provided friendly API end points to the user, halved the time it takes a user to run a model
- Stored and manipulated complex data, such as: geometry, materials, loads, constraints, mesh, results
- Presented the project to the Boston Python Meetup Group
- Distributed it on pypi + Github, published extensive documentation