Mathew Wheatley

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Professional Summary

I am a results-oriented engineer with 10 years of experience and a proven history of problem solving in challenging fields including aircraft and rocket engine design. My experience gives me an understanding of the importance of each aspect of engineering from requirements definition, research, design, analysis, integration, teamwork, testing, and maintenance. I am excited to tackle new problems in the face paced industry that is software engineering.

Software Projects

Brewery Run

Demo | Hosted | Front-end | Back-end

A web-app enabling users to create, share, and discover running routes between local breweries.

- Implemented secure login to Rails API back-end via JWT tokens stored in secure http only cookies
- Built React based app which utilizes Redux store with asynchronous fetches to back-end via middle-ware Thunk.
- Interfaced with several APIs including Google Maps and Open Brewery DB.
- Safeguarded user data by conditionally provided data based on user and rendering requirements.

Flatiron Fight

Demo | Hosted | Front-end | Back-end

A web-app allowing Flatiron students to duel against one another and instructors in a turn-based game.

- Managed construction of Redux based front-end, Rails API based back-end with a small team.
- Linked several models on the back-end with various relationships such as "has many" and "belongs to".
- Ensured only logged in users were able to access restricted routes and data.
- Quickly applied page styling by leveraging Bootstrap.

Technical Summary

Coding Languages

- Ruby
- Ruby on Rails
- SQL & Postgres
- Javascript
- React with Redux
- Python
- HTML/CSS

Design/Analysis Tools

- PTC Creo (Pro Engineer)
- NX Unigraphics
- Autodesk Fusion 360
- Matlab
- ANSYS Workbench/ADPL
- WinPlot

Other Tools

- Adobe Photoshop
- Adobe Lightroom
- Adobe Illustrator
- Adobe Premier Pro
- Inkscape

Project Tools

- PTC Windchill
- Primavera P6
- IBM Doors

Professional Experience

Propulsion Engineer III - BE-3 & BE-3U Rocket Engine Turbopumps

Blue Origin | Seattle, WA | December 2015 - September 2019

- Critical and timely redesign in response to life shortfall due to vibrational issues on the BE-3 liquid hydrogen turbopump turbine rotor.
- Test data trending against design analysis predictions to verify performance and integrity as well as gain insight into any shortfalls or unforeseen issues.
- Turbopump assembly stack verification via drop measurements, torque tests, and helium leak tests.
- BE-3 turbopumps design, analysis, procurement, manufacturing, assembly, and testing lead. While I held this role I oversaw of design, analysts, manufacturing, integration, and test engineers with a average team size of five.
- Development of wiki to act as the single source of truth for design, block updates, procurement, schedule, and testing for the BE-3 turbopumps.

- Schedule and resource planning of design, procurement, inspection, assembly, and integration dates for BE-3 turbopump development and production.
- Authoring of two executive level memorandums describing technical issues and recommended path forward.

Design Engineer - AETD Aircraft Engine High Pressure Turbine & Compressor Rotor

General Electric Aviation | Cincinnati, OH | June 2012 - November 2015

- Design of eight critical rotating parts in the compressor of the AETD jet engine.
- Preparation as well as presentation of numerous design reviews at various stages of design to chief engineers, management, and other top level stakeholders such as the Air Force.
- Structural, thermal, and vibrational analysis of critical static as well as rotating hardware using the appropriate tools ranging from hand calculations, home grown code, and finite element analysis.
- Logic verification on HIL, engine test, and flight test of the GEnx-1B FADEC.

Control Systems Engineer - GEnx-1B Aircraft Engine FADEC

General Electric Aviation | Cincinnati, OH | October 2010 - June 2012

- Logic design and implementation of various valves on the GEnx-1B aircraft engine.
- GEnx-1B squawk lead responsible delegating, management, and resolution of flight test issues.

Education History

Software Engineering
Flatiron School | Seattle, WA | March 2020 - July 2020

Masters of Science in Mechanical Engineering | 3.46 GPA
The Ohio State University | Columbus, OH | September 2012 - May 2014

Bachelors of Science in Mechanical Engineering | 3.32 GPA
University of Maryland, Baltimore County | Baltimore, MD | September 2006 - August 2010

Technical & Leadership Credentials

Professional

Edison Engineering Program at GE	2011 - 2014
Advanced Course in Engineering at GE	2011 - 2013
Geometric Dimensioning & Tolerance	2012 & 2016
Foundations of Leadership at GE	2012
Mechanical Design Fundamentals at GE	2011
Engineer in Training (EIT) Certification	2010

Volunteerism

Teaching & Construction Abroad	2019
The World Is Fun Event Lead	2016 - 2019
FIRST Robotics Robot Inspector	2015
GBB Lead Coordinator	2015
Paint The Town Committee	2014 - 2015
GBC Hands-On Committee	2013 - 2015
Give Back Beyond (GBBC) Volunteer	2012 - 2015
Give Back Cincinnati (GBC) Volunteer	2010 - 2015

Extracurricular Pursuits

- Laser Cutting
- Wood working
- Leather working
- 3D Printing
- Photography
- Running
- Climbing
- Skiing
- Hiking
- Drones