

# 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 ranging from aircraft and rocket engine design to e-commerce. 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 that will make this world a better place.

## Professional Experience

### 👤 Back-end Software Developer Intern - Commerce Intelligence

🏢 Shopify

📍 Seattle, WA (Remote)

📅 January 2021 - Present

- ▶ Closely collaborated with interfacing teams via frequent paired programming as well as code reviews in a continuous integration environment.
- ▶ Implemented type checking via Sorbet on numerous modules to ensure data is properly structured and the code is semantically explicit.
- ▶ Successful execution of cursor based GraphQL pagination on a Ruby on Rails back-end service to serve customer facing activity log.
- ▶ Wrote and maintained well-tested code on Ruby on Rails back-end which served data for merchant insights.
- ▶ Actively sought out growth opportunities to expand my skill set while balancing all deliverables.

### 👤 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.
- ▶ Created critical assembly stack verification via drop measurements, torque tests, and helium leak tests.
- ▶ 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 along with resource planning of design, procurement, inspection, assembly, and integration dates for BE-3 turbopump development as well as 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.

### 👤 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 for delegating, management, and resolution of flight test issues.
- ▶ Logic verification on HIL, engine test, and flight test.

## Education History

 Software Engineering  
 Flatiron School

 Seattle, WA


 March 2020 - July 2020


 Masters of Science in Mechanical Engineering

 The Ohio State University

 Columbus, OH


 3.46 GPA

 September 2012 - May 2014

 Bachelors of Science in Mechanical Engineering

 University of Maryland, Baltimore County

 Baltimore, MD

 3.32 GPA

 September 2006 - August 2010

## Toolbox Summary

### Languages

- Ruby
- Javascript
- Typescript
- Python
- HTML
- CSS
- Markdown
- YAML
- SQL

### Notable Libraries

- Minitest
- Sorbet
- Redux
- Thunk
- GraphQL-Ruby
- Apollo

### Frameworks & SDK

- Ruby on Rails
- React
- Flutter

### Database

- Postgres
- Sequel Pro

### Collaboration

- Miro
- Zenhub
- Git & Github
- Tuple
- Slack

### Design

- Photoshop
- Lightroom
- Illustrator
- Premier Pro
- Inkscape
- Figma

### IDE

- iTerm
- VS Code

### CAD

- PTC Creo
- NX Unigraphics
- Fusion 360

### Other

- Matlab
- Ansys Workbench/ADPL

## Personal 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.

## 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

