

Kelly Justin Wilson

{ me: architect, myself: structural engineer, i: software developer }

A philomath trained in architecture, structural engineering, and computer science. I've applied these passions to develop software applications that:

- automate and streamline data-driven engineering, construction documentation, and Building Information Modeling (BIM)
- create 2D/3D data visualization for pattern/trend recognition
- perform machine-learning workflows to predict cost for kit-of-part (lego-like) building systems.
- convert custom business logic from multiple sources into a real-time dashboard for big tech real estate / workflow portfolios

WORK EXPERIENCE

Software Engineer

9/2022 – 03/2024

OUTER LABS, INC :: Covina, CA (Remote)

Selected Projects:

- **CLAI Studio: Programming App:** [NestJS, TypeOrm, Typescript,, GCP, CloudSQL,, PostgreSQL, React]
 - Planned, authored, and led epics for FE & BE feature work to convert bespoke 30+ tab google spreadsheet into a web-based programming application that provided a platform to perform program studies to discern project diagnosis, feasibility, and/or explore simulations.
 - Co-developed a template uploader feature decreased migration implementation for updating BE logic by 99%
 - Revised and streamlined deployment documentation/process to reduce mistakes, improve implementation, facilitate onboarding
- **Calibrator / OneWBS:** [Golang, Typescript, Apollo Client, GraphQL, React w/ Recoil, Firestore]
 - Planned, authored, and led epics that created a:
 - Metric - Imperial conversion tool
 - Currency Exchange tool
 - Cost Adjustment tool based on bespoke location data
- **Clay Briefs / Designs** [Golang, Typescript, Apollo Client, GraphQL, React, Firestore, Three.js, React-Three-Fiber]
 - Planned, authored, and led epics for FE & BE work to develop a 3D feature that allows users to import custom geometry to be analyzed by existing processes and visualized in color-coded voxels that represent programmatic spaces.

Engineering Manager

6/2018 – 9/2022

Structural Engineer / Software Developer

6/2015 – 6/2018

Projectfrog :: San Francisco, CA (Remote during/after COVID)

Selected Projects:

- **Frog Price Estimator (FrogPE)** [Python, Scikit-learn, Pandas, Numpy, PostgreSQL, Javascript, JQuery, & Flask]
 - Restructured 8+ smart-sheets from departmental resources to parse into cleansed datasets for feature engineering, training, and testing using the selected ML algorithms: K-Nearest Neighbor, Random Forest, and Linear Regression.
 - Co-developed a ML web application that predicted wall panel price per square foot in wood and cold-formed steel from user input that saved ~40 hours of manual research/correspondence per project.

CONTACT

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SKILLS

Programming Languages:

- Python
- Typescript / Javascript
- Golang
- C#
- MATLAB
- CSS / HTML
- Git / Git Bash

Version Control:

- GitHub / GitLab
- Docker

Frameworks, Libraries, & Runtimes:

- NodeJS
- ExpressJS
- NestJS
- React (+ Libraries: Recoil, ...)
- Flask
- GraphQL
- Three.js

UX/UI Prototyping / Design Systems::

- Figma
- LucidChart / Miro
- Adobe XD, Photoshop
- Material UI

Data(- base, visualization), ML:

- Tableau
- D2.js, D3.js, & ChartJS
- PostgreSQL, PostgREST, Psycopg2
- TypeORM / Prisma (ORMs)
- MongoDB
- Pandas, Scikit-Learn, & Numpy
- Smartsheet API

Modeling / F.E.M. Softwares:

- Revit, Rhino3D, AutoCAD, Adobe
- RISA 3D, Etabs, SAP2000, EnerCalc, ...

EDUCATION

THINKFUL

Software Engineering Immersion Bootcamp
Remote

UC Berkeley

M.S: Structural Engineering
M.Arch: Architecture / Computational Design
Berkeley, CA

Lehigh University

B.S. Structural Engineering
Bethlehem, PA
B.Arts: Architecture
Minors: Computer Science & Theatre
Bethlehem, PA

- Prepared leadership with metrics that resulted in an increase in projects by 40%.
- **Revit - Construction Document / Component Model - Automation (RCDA/RCMA)** [*Python, Revit API, C#, WPF*]
 - Automated CD set content that minimized workflow by 8 hours per project.
 - Revised modeled elements that lessened modeling/drafting hours by 16 hours per project.
 - Established direct connection to engineering analysis that influenced building models and reduced the QA-QC process by 90%.
- **RevitToSaw (R2S)** [*Python, Revit API, C#, WPF*]
 - Produced project panel schedules, cut-lists, updated/labeled shop drawings, and data files consumed by third-party vendor saw-cutting software in minutes.
 - Decreased manual data processing by 32 hours for each project.
- **Structural Analysis Engine/Service (SAE/S)** [*Typescript, Javascript, NodeJS, ExpressJS, AWS S3, Excel & API, React, ChartJS*]
 - Conceptualized, supervised, and co-engineered a back-end application that performed full-building structural analysis/design saving 24-36 hours of engineering work per project.
 - Implemented real-time structural validation and reduced time spent confirming client/customer design proposals by 99%.
- **Frog Database (FrogDB)** [*Python, Psycopg2, PostgreSQL, SQL*]
 - Led a database that coalesced data resources with automated CRUD processes that saved an estimated 24 hours per week of manual processing.
 - Lessened data acquisition via email correspondence by 80%.
- **Arch/Engr Design & Project Management**
 - Designed/ engineered building components for product-driven Industrialized Construction methods.
 - Managed the CA scope of projects that informed methods to improve product, innovation, and delivery.

PROFESSIONAL LICENSURE

- CA Seismic Exam (Pending)
- NCEES PE Exam (Passed)
- NCEES EIT Exam (Passed)