Kelly Justin Wilson

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

A polymath 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 (Passed)
- NCEES PE Exam (Passed)
- NCEES EIT Exam (Passed)