David M.J. Lanigan

Philadelphia, Pa — dav.lanigan@gmail.com — 484.798.5980

Please follow the links to move throughout the resume and/or view examples of referenced skills/experience.

About Me:

I am an Application Developer who has Bachelors and Masters degree in Mechanical Engineering. I work with Python, R, Javascript, SQL, NoSQL and AWS to create API's and UI's for data science applications. In my free time I do work as freelancer mostly making FinTech applications. For more examples of personal project visit my github. For more examples of freelance projects visit my website.

Skills/Technologies:

Programming Languages: Python, R, SQL, JavaScript, and some Go

Databases: PostgreSQL, Firebase, SQLite3

Cloud Resources: Amazon Web Services, Google Cloud

Frameworks: FastAPI, Vue.js, React.js, Electron.js

Automation/Testing: pytest, Selenium

CI/CD: Cloud Build / Github Actions, CodeBuild

Other Tech: Docker, git, Mulesoft

Soft Skills: Presenting, Technical Communication, Work Independently, familiar with AGILE Development

Certifications:

> Udacity Data Engineering Nano-Degree

Experience

Software Experience

Application Developer (Stockell Consulting - Contract with Bayer)

Philadelphia, PA (Remote) | September 2021 - Present

RESTful API application Building API's and UI's using Python, R, AWS (Amazon Web Services) and SQL (Postgres) and NoSQL (DynamoDB) databases.

- API with FastAPI and Fargate/Lambda
- Fargate API's deployed using **CloudFormation** and **CodeBuild** and **Docker.**
- UI applications written in **Javascript** as well as **R** using Shiny.
- Optimizing API and UI by configuring server, application load balancer and database.
- Configuring API traffic through reverse proxies such as **Mulesoft**.
- Building application CICD automation tools with Python/Typer and boto3.
- Writing documentation on creating and deploying REST API's.

Freelance Software Developer (FinTech)

Philadelphia, PA (Remote) | March 2020 - Present

Regional Sales Data Visualization Tool App

A tool for visualizing, manipulating and summerizing regional sales areas and data using maps of the United States and Canada.

- Written in **JavaScript** using **Vue.js**.
- Provides maps of sales areas generated using Google's Geocharts library for Javascipt.
- Display and manipulate sales data for different regions by selecting areas on map.
- Provides a summary of the total sales for each region.
- Import and export data via CSV files.

Stock Indicator Desktop App

A program to stream stock prices, run analysis functions on the price data, ETL data into a SQLite3 database and display results with GUI interface.

- An **ElectronJS** desktop app - written in **JavaScript** using **Vue.js**.
- Market data streamed using websocket from Alpaca API REST API.
- **ETL** data to **SQLite3 database** and display in GUI.
- Built to be extensible through the importation of analysis functions such as RSI, Stochastic and SMA indicators to trigger GUI display.

Personal development projects

Stake Everything Crypto Farming React Website and API

Website and API and data collection program for aggregating and viewing different Binance Smart Chain farming and staking APY's. Written in **Javascript** (v1) and **TypeScript** (v2). See code on github.

Frontend Website:

- Written using **React JS** framework.
- Uses **Firebase** as datastore and for hosting.
- **CI/CD** with **Cloud Build and Github Actions**

API:

- Written in Python using **Flask**.
- Handles GET, POST, PUT requests.
- Uses **Firebase** datastore
- Deployed to **Cloud Compute Engine** instance using gunicorn WSGI server within a **Docker** container.

Data ETL:

- Written in Python using **Flask** to trigger background data collection process.
- Uses Google Cloud Scheduler cron job to trigger data collection process.
- Uses **Selenium** + API's to collect data.
- Uses **Firebase** datastore
- Deployed to **Cloud Run** with a **Docker** container.
- **CI/CD** with **Cloud Build and Github Actions**

Research Experience

Graduate Research Assistant

University of Texas at Dallas | Dallas, TX | January 2017 - January 2018

Master's thesis related work investigating the effects of connection-based attacks on the controllability of real-life complex systems modeled as networks.

- Explored graph data structures with algorithms and visualizations using Python and **matplotlib**.
- **Independently driven** but supervised work.
- Demonstrated work at completion with a presentation to thesis committee members.

Undergraduate Research Assistant

Aeolus Research Group | Dallas, TX | May 2015 - Aug 2015

Undergraduate fluid dynamics research work studying the effects of heat flux induced atmospheric boundary layer turbulence on diurnal erosion patterns in western Texas.

- Work was done using MATLAB programming language and **Excel**.
- **Independently driven** but supervised work.
- Statistical analysis was performed on simulation data.
- Frequent communication with supervisor discussing results and progress.
- Work culminated in a published paper.

Other Industry Experience

Mechanical Project Engineer

Hillside Custom Manufacturing | Morgantown, PA | February 2019 - March 2020

Project Engineering/Design Engineering role involving:

- Assisting in the management of small to large projects including the construction of two half-a-million dollar machines.
  - **Communicate** with shop and assembly working on technical aspects of machine construction.
  - Material planning for raw materials, custom made parts and purchase parts.
  - Track the status of parts going through the shop.
  - Keep track of parts needing secondary processes.
  - Keep parts and **documentation organized** and **direct** assembly where necessary.
- **Researching** and **advising** on purchasing of 3D printer.
- Used Python and **Excel** to organize project parts and assembly manufacturing data for projections and organization.
- Management of 3D printing resources.
- Made design customizations to filler machines up to $100,000 in total cost using Solidworks CAD software

Education

MS in Mechanical Engineering (May 2018)
University of Texas at Dallas - Dallas, Texas
GPA: 3.5

BS in Mechanical Engineering (Dec 2016)
University of Texas at Dallas - Dallas, Texas
GPA: 3.7