Byron Wall

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Chemical Engineer with 10+ years in Process, Operations and Research. Looking to transition to a full time software development role. Emphasis below is on programming contributions in engineering roles.

Skills

- Expert: Excel/VBA, TypeScript/JavaScript, data analysis and visualization, statistics
- Proficient: C#, Node.JS, Express, React, SQLite, Python, R, RESTful APIs, Git
- Novice: server admin, database admin, containers, microservices, AWS

Allison Transmission / Indianapolis, IN

Hydraulic and Fluid Systems Engineer November 2017 – Present

Responsible for all technical aspects of transmission fluid at Allison globally; support hydraulic development

- Created a data analysis platform for technical studies on data collected from transmission testing
  - Total codebase is around 60k LOC evenly split between front end and back end; started from scratch
  - Platform provides significant gains in productivity and overall understanding of transmission operation
  - Back end: C# server using Nancy, SQLite, Squirrel
    - Server runs locally and creates/consumes local SQLite databases
    - Parses and processes data from our proprietary/encrypted "Datalog" binary storage format
    - Wrote unit tests related to data parsing, calculations, and other internal details
    - Built a custom calculation DSL/syntax for defining data events and analyses
  - Front end: Typescript, React, d3.js, DC.js
    - Frontend provides for interactive and exploratory data analysis of aggregate and raw time series data
    - Pages built using DC.js can process millions of time series data points for plotting and aggregation
- Created an interactive schematic tool which allows creating and viewing hydraulic schematics
  - Built as an Electron app with React and Typescript.
  - Schematics generated using SVG with React rendering the individual tags
- Reworked a Python tool which searches for transmission architectures utilizing combinatorics and graphs

TDA Research / Denver, CO

Research and Project Engineer August 2015 – October 2017

Supported the design, construction, and operation of a $2MM+ CO_2 capture pilot plant.

- Programmed the data pipeline to transfer CSV files into an InfluxDB instance with Grafana for charting.
  - Built an Excel add-in (C# XLL) to communicate with the InfluxDB instance via Excel UDFs
- Built an automated quoting tool using Excel/VBA, reducing engineer time from hours to minutes.

Continental Technologies / Boulder, CO

November 2014 – July 2015

Chevron Phillips Chemical Company / Pasadena, TX

Operations and Process Engineer June 2010 – July 2014

Supported day-to-day operations of polyethylene and polypropylene units.

- Built an Excel VBA add-in to query and analyze quality data, used by 20-30 engineers
- Created a SharePoint site for the Operations group, centralizing access to critical files
- Developed several desktop applications with C# to gather data and automate tasks
- Exceeded expectations with work, ranking in the top 5% of employees in 2 consecutive years

runnDAILY.com / Indianapolis, IN

Co-Founder and Full Stack Developer November 2008 – August 2010

Created a website dedicated to mapping outdoor fitness activities

- Front end: HTML, CSS, JavaScript, jQuery
  - Integrated Google Maps functionality to create routes and log training information
- Back end: PHP, MySQL, and an Apache server
  - Developed a custom MVC engine, templating system, and permissions manager using PHP
- Worked with the Purdue Exponent newspaper to feature an article about runnDAILY on launch day

Purdue University / West Lafayette, IN

Bachelor of Science in Chemical Engineering (GPA: **3.97**/4.00) August 2006 – May 2010