J.P. HUTCHINS

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SKILLS:

Python, C, C++, JavaScript, Java, SQL, React, Flask, Linux, Git, Embedded Systems, Audio DSP, Functional Programming, Object Oriented Programming, Test Driven Development, Continuous Integration

PROJECTS:

OPEN ENERGY VIEW *React, Chart.js, Ramda, Python, Flask, Celery, RabbitMQ, SQLAlchemy, uWSGI, Nginx* live | github

Provide utility customers with on-demand analysis of their resource consumption

- Developed and released a Python module that automates the API of the Energy Services Provider Interface, a national standard for utility companies
- Designed a Flask RESTful API that parses and persists data from utility APIs and IoT devices to a SQL database and sends data to the JWT / OAuth 2.0 secured web interface on demand
- Researched and tested an approach to energy data statistical analysis that provides the user with actionable insights that can help them lower their utility bill and carbon footprint
- Structured a React frontend with a functional programming paradigm leading to high performance analysis and reliable caching of data, lowering server demand
- Deployed scalable product on multiple servers/VMs and configured SSL, Nginx, uWSGI, Celery, and systemd

LIBRARY FINDER & LIBRARY EXPLORER *C/C++, JavaScript, HTML, CSS, Python* live | github

Portable command line tool to find "media libraries" on a filesystem, such as iTunes or Plex

- Created an algorithm to rapidly traverse entire filesystems and classify folders while using little memory
- Designed an N-ary tree data structure to represent the classified filesystem and interpret it for the user
- Implemented a GUI by translating the data structure into HTML, packaging it with inline CSS and JavaScript, and writing the HTML to the current directory
- Leveraged Python as a pre-compiler to automate the process of converting the development JavaScript and CSS files into C++ raw string literals for easy deployment

EXPERIENCE:

Technician

JL Integrated Aug 2017 - June 2020

- Designed IT infrastructure projects for business and smart home including architectural drawings, wire paths, and product selection
- Spearheaded the modernization of project planning by utilizing 3-D modeling, maximizing deployment efficiency by reducing the need for revising drawings in the field
- Secured remote support infrastructure and security with the use of VPNs, end-to-end encryption, and encryption of stored customer data
- Programmed and supported automation and security products to maintain 24/7 availability
- Installed and integrated network, IoT, security and AV technologies such as Lutron, Sonos, Ubiquiti, Cisco, Z-Wave, Zigbee, WiFi, Home Assistant, Ruckus, Elan, RTI, Crestron, URC, Alexa, Google Assistant, MQTT

Music Teacher, Composer, and Producer

Self Employed Sep 2008 - Present

- Built a classical piano studio of over 30 students and managed all aspects of the business resulting in years of happy students and parents
- Constructed a professional mixing and mastering studio from which work was completed for recording labels and private clients
- Explored low-latency improvisational computer music with the Pure Data and Max MSP programming environments using the Linux real time kernel

EDUCATION:

Oberlin - *BM Music Composition, 2004-2008*

MIT OpenCourseWare - 2018 - present Following the 6-3 course track, Computer Science & Engineering