Julian Pitney

SOFTWARE ENGINEER

Contact

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Skills

Python

Docker

Terraform

AWS

Kubernetes

CI/CD

Neural Networks

Git

Linux

Digital Electronics

Sensors

Actuators

Soldering

Languages

English

French

Hobbies

Trained Muay Thai for ~15 years.
Fought competitively a few times.

Portfolio

https://julianpitney.ca

Work Experience

Software Engineer Team Lead, Récherches Neuro-Hippocampe

OCTOBER 2021 — PRESENT

- Hired and led a team of 5 developers to create a digital platform for the company.
- Conducted thorough research by engaging with all 70 employees to understand business processes, data, and systems.
- Designed and implemented the company's cloud infrastructure using Terraform, AWS and K8s. The infrastructure was used to host our Django API, React frontend, and ~300GB of data in RDS and S3.
- Built all our CI/CD pipelines using GitHub Actions.
- Deployed platform beta to development environment and received very positive feedback from frontline staff and executives. New system will dramatically increase efficiency of workflows directly involved in generating revenue.
- Currently overseeing the security hardening process with a professional third-party pen testing shop.
- Scheduled for production deployment in summer of this year. Expecting to serve over 70 employees across multiple sites with data for 12k patients.

Software Engineer (part-time), GeneRxN Research

FEBRUARY 2022 — PRESENT

- Built prototype qPCR machine with integrated DNA purification.
- Selected and integrated high-accuracy SMD temperature sensors from Texas Instruments. Designed PCB, manufactured boards, performed SMD soldering and programmed resulting sensor boards to serve as control loop inputs.
- Implemented photodiode amplifier to measure quantity of PCR products.
- Met regularly with chemistry team to ensure system met their requirements.

Software Developer, University of Ottawa - Department of Cellular and Molecular Medicine

DECEMBER 2017 — OCTOBER 2021

- Worked with M.Sc, PhD and postdoc students to automate their experiments.
- Built a complete lightsheet microscope system to generate 3D scans of full-brain vasculature in rodents. System cost $30,000 but scan quality was similar to that of $800,000 commercial systems. These scans were published in a paper.
- Used Spinnaker SDK (C++ and Python interfaces) to integrate FLIR cameras.
- Designed and manufactured mechanical components (CNC, laser cut, FDM).
- Used RPi, Arduino and Jetson Nano in a dozen different projects.
- Published Python distribution packages to PyPi.
- Used OpenCV to process image data.
- Worked with a wide variety of sensors and actuators.

Software Developer (Co-op), Thales Canada

JANUARY 2015 — AUGUST 2016

- Installed GPS sensors and interfaced with them using Python.
- Processed LIDAR data from sensors mounted on autonomous rail systems.
- Built block breaker game in Unity Engine.
- Assisted senior engineers in testing of large C and x86 codebase.