Joseph Acernese

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Education

University of Guelph — Guelph, ON
Bachelor of Computer Science — September 2020 - April 2024

Technical Skills

Languages: Python, JavaScript, Typescript, HTML/CSS, Java, Ruby, C, SQL, Shell/Bash
Frameworks and Libraries: Node.js, Express.js, React, npm, Pytorch, Pandas, NumPy, Rails, Django, Pytest
Development Tools: Git, GitHub Actions, Docker, AWS, Kubernetes, MySQL, JIRA, Figma

Work Experience

Fullstack Software Engineer — Kingston, ON
Distributive — May 2024 - Present

- Upgraded **continuous integration testing framework** to solve test limitations increasing code coverage by **11%**
- Resolved result discrepancies on a distributed AI inferencing platform, creating a report of the findings and **unit tests** to ensure correct future results
- Optimized **Webpacked** local modules for **WebAssembly** execution environments, decreasing execution time by **80%**
- Improved serialization for large binary data, decreasing data-size by **11%**, resulting in lower bandwidth usage and faster data transfer

Software Engineer Contractor — Kingston, ON
Royal Military College of Canada — December 2024 - Present

- Developed a **Python Package** for a model used to track particle movement in the ocean using Copernicus datasets
- Designed and wrote an **API** which allows users to load datasets, and input parameters used for particle tracking
- Used **Github Actions** to create a **CI pipeline** to execute **Pytest unit tests** upon any push or pull request
- Created tools to assist with downloading data and outputting results into file formats such as CSV, KML, and pickle
- Wrote a report with **documentation** of features and components of the package, as well with examples with real data

Fullstack Software Engineer Co-op — Kingston, ON
Distributive — May 2023 - August 2023

- Designed and developed **React** components for metering and selecting compute cores for compute workloads, allowing users to manage CPU-cores
- Parallelized a **C** program which calculates Legendre Pairs and created infrastructure to automatically deploy workloads and detect pairs, allowing for the program to be executed in parallel on **300k+ compute nodes**
- Improved visibility for communications with compute nodes using **life cycle events**, allowing users to better understand their workers
- Created **unit tests** for **CI/CD pipelines** to validate the accurate timing and payloads of events emitted by micro-services in order to expand code coverage

Software Engineer Co-op — Guelph, ON
University Of Guelph — May 2022 - August 2022

- Developed a **prepossessing pipeline** to extract bond transactions, transforming it into a single data format such that it could be used to forecast financial risk in an AI model
- Researched academic papers for information on how to interpret the financial data and remove irrelevant transactions
- Refactored a legacy SAS program into a modern **Python** script by translating SQL queries into equivalent **pandas** DataFrame operations for data manipulation

Projects

Image Processing App *Python, PIL*

- Developed a **Python** application which allows users to upload, modify and save images
- Used a **Python class** to represent images, allowing for methods to manipulate or access data
- Implemented cropping, linear/non-linear filtering, and more as methods to modify images
- Utilized multiple image padding techniques as part of the image class, such that get methods could handle out of bound requests