

Lucas Rea

Software Engineer | Data @ AMD

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8 Summary

Skilled software engineer with nearly 4 years of experience in developing web applications, data analytics, and machine learning. Proficient in multiple programming languages and frameworks with a strong focus on collaborating toward data-driven solutions. Possesses practical working knowledge of all aspects of the software development lifecycle. Played a key role in AMD's MI300 product launch, providing data science tools and automation development for performance benchmarking. With a BAsC from the University of Toronto, specializing in Artificial Intelligence, pursuit of a MEng degree with an emphasis in data science and machine learning will commence in September 2024.

🧰 Experience

Sr. Software Development Engineer

AMD | Data Center GPU Performance

📅 Sept. 2022 - Present

- Develop automated **data analytics** tools for **AI and HPC** workload performance, providing insights into **LLM** inference and bandwidth across multiple AMD and NVIDIA platforms.
- Key involvement in data automation significantly supported performance benchmarking for AMD's **MI300 product launch**, facilitating competitive and non-competitive analysis for strategic marketing positioning.
- Contribute to **project management**, and **full-stack** development—leveraging docker swarm for seamless integration and scalability of data automation services.

Software Development Engineer 2

AMD | Signal Integrity

📅 May 2021 - Sept. 2022

- Developed an automated **data** pipeline for signal integrity simulation tools providing valuable **insights** for informed engineering and design decisions.
- Integrated **Jenkins** for CI/CD, IBM LSF for job scheduling and compute-intensive workload runs, and MongoDB for flexible **data collection**.
- Leveraged Python for automation oversight and post-simulation **data analysis**.

Software Engineering Intern

AMD | Apple SW

📅 May 2019 - May 2020

- Worked with senior engineers to enhance multimedia test apps, with a primary focus on measuring encode and decode quality for MacOS GPU drivers, targeting video codecs such as AVC and HEVC.
- Applied Python for **data modelling**, contributing valuable insights to performance initiatives and helped orchestrate new and existing automated multimedia **performance test plans**.

🏆 Awards

July 2023 | AMD Spotlight Award

- Recognition for work done in AMD's Data Center GPU performance data analysis, and MI300 launch.

2017, 2018, 2021 | University of Toronto Dean's Honour list

Dec. 2017 | University of Toronto MLH hackathon winner

- Implemented Pygame visualization of stochastic gradient descent.

🎓 Education

MEng. Data Science and Machine Learning
University of Toronto

📅 Sept. 2024 - April 2026 | Toronto, ON

BAsC. Computer Engineering

University of Toronto

📅 Sept. 2016 - April 2021 | Toronto, ON

- Minor : Artificial Intelligence Engineering.
- GPA : 3.66

💻 Skills

Programming Languages

Python • JavaScript • HTML / CSS • SQL • C / C++

Data

Plotly (Python & JavaScript) • MongoDB • Pandas • Numpy • MySQL

Frameworks / Libraries

React • Flask • PyTorch • Tensorflow • Docker • Scikit-learn • OpenCV

Other

REST • Github • Jira • CI/CD • Jenkins • Project Management

🔍 Projects

EEG Artifact Detection

University of Toronto Capstone Project

- Developed a recurrent CNN, in Tensorflow, aimed at identifying EEG artifacts—aiding in seizure onset prediction.
- Transformed EEGs to PAC image representations to capture temporal trends in sequential image data.

Facial Expression Recognition

University of Toronto APS 360 - Fundamentals of Deep Learning

- Designed and optimized a custom PyTorch CNN for real-time facial expression recognition.
- Integrated webcam and employed Viola-Jones (via OpenCV) for efficient multi-face detection at inference time.

Stock Market Trend Prediction

📅 Independent Project

- Performed Exploratory Data Analysis and Feature Engineering on historical stock market data.
- Utilized ensemble learning / modelling (KNN, RF, GBT) for trend prediction, enhancing accuracy and resilience.