Lucas **Rea**

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Education

B.A.Sc. Computer Engineering | University of Toronto

Sept. 2016 - April 2021 | Toronto, ON

- **Minor** : Artificial Intelligence / Machine Learning.
- **GPA** : 3.66, Deans Honor List
- **Coursework** : Algorithms & Data Structures, Operating Systems, Probability & Statistics, Computer Networks, Databases, Machine Learning, Artificial Intelligence.
- **2017** University of Toronto MLH Hackathon, 1st place. Pygame visualization of SGD.

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

Other

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

Experience

AMD | Multiple Roles - 3 years, 10 months

Sr. Software Development Engineer - Data Center GPU Performance Analytics

Sept. 2022 - Present (1 year, 6 months)

- Develop analytical and **visualization tools**, used to gain insights into **AI performance** for AMD data center GPUs.
- Drive enhancements to the **data engineering pipeline** by; adding reporting customizations, data retrieval and aggregation optimizations—providing clean and visualized AI and LLM performance data for competitive analysis.
- Develop internal automation architecture for **streamlined analysis** (**React** frontend, with **Python** backend).
- Contribute to project development, including **database schema** designs and system infrastructure management; utilizing **Docker Swarm** for service deployment.

Software Development Engineer 2 - Signal Integrity

May 2021 - Sept. 2022 (1 year, 4 months)

- Engineered an automated **cloud-enabled data engineering pipeline** for signal integrity simulation tools.
- 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,** optimizing operations and providing valuable insights for informed engineering decisions.

Software Engineering Intern - Apple Software

May 2019 - May 2020 (1 year)

- Worked with senior engineers to enhance **multimedia** test apps (in **C++**), 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.

Projects

EEG Artifact Detection | University of Toronto Capstone Project

Sept. 2020 - April 2021 (8 months)

- Worked with Prof. Berj Bardakjian to develop a **recurrent CNN**, in Tensorflow, aimed at predicting EEG artifacts to aid in seizure onset prediction.
- Transformed EEG signal data to PAC image representations to capture temporal trends in sequential image data.

Live 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 live video feed and employed the Viola-Jones algorithm for efficient face detection during real time inference.