Eric Zimmermann

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Personal

Adaptive, results driven, team oriented graduate student with industrial and research experience. Expertise in machine learning, system design, and data driven approaches to solving complex problems. My current research is focused on efficient self-supervised learning.

Education

McGill University 09/2015 - Present
M.Sc, B.Eng - Major Electrical Engineering, Minor Software Engineering Montreal, Qc
- Probabilistic Vision Group, Mila (research institute in artificial intelligence)
- GPA: 4.00/4.00

Technical Skills

Programming Languages: Python, Java, C, C++, JavaScript
Systems, Tools, Frameworks: Linux, Git, Office, PyCharm, Eclipse, Spring, Jira, Docker, Pytorch, Numpy
Languages: English, French

Industrial Experience

Machine Learning Developer (R&D) 01/2022 – Present
Sama Montreal, Qc
- Designed and developed classification tools using object detectors to organize content across various datasets in Python
- Accelerated semi-manual image annotation time by providing workers with automatic instance segmentation modules

Electrical System Designer 05/2017 – 05/2019
CAE Inc Montreal, Qc
- Implemented electrical design optimizations and retrofits for modern and legacy full-flight simulators
- Deployed a real-time interactive diagnostic tool for power distribution systems hosted on a remote logic controller
- Developed a web-app using JavaScript to compute wire gauges with respect to voltage-phase in accordance to safety codes

Academic Experience

M.Sc Research 09/2020 – Present
McGill University - Probabilistic Vision Group - supervised by Prof. Tal Arbel Montreal, Qc
- Lead software architect and developer for automated medical deep learning pipeline used to standardize lab workflows
- Implemented a CUDA compatible library to reduce CPU bottlenecks and neural network training time by 30%
- Designed a geometry inspired self-supervised learning algorithm achieving state-of-the-art results on Cifar-10
- Trained deep networks end-to-end for a variety of tasks which include classification, regression, segmentation in Python

Teaching Assistant 09/2019 – 12/2021
McGill University - Department of Electrical and Computer Engineering Montreal, Qc
- Graduate/Undergraduate courses including: ECSE 626 - Statistical Computer Vision, ECSE 415 - Intro to Computer Vision
- Graded projects, organized tutorials, and created assignments across various computer vision algorithms

Projects

Threshold Confusion Matrix | Open-source contribution: PyTorch Ignite / Monai 10/2021
- Enabled real-time confusion matrix derived metric calculations by providing 100x speedup using GPU vectorization

Hackathon - MAISHacks 2021 - 2nd Place | Multibet 10/2021
- Designed application to help students learn how to write in new languages built with React, Flask, and Pytorch
- Integrated autoencoders and spatial transformers to provide users with feedback throughout their learning process
- Accommodated any language by scaling models to learn from synthetic data generated by a pyGame

Hackathon - McHacks 8 - 2nd Place | McTavish St. Bets 02/2021
- Implemented a tool used to forecast stock prices based on community feedback scraped from Twitter
- Utilized BERT language models and stochastic neural differential equations to model price trajectories

Hackathon - CodeJam 2020 - 1st Place, Sama Sponsored Challenge | MyWardrobe 11/2020
- Developed virtual try-on room within a marketplace for customers to see how a piece of clothing looks on them
- Registered clothing to a user's figure using Open-Pose interconnected with a semantic segmentation neural network

Academic - ECSE 321 | Courselector 05/2019
- Implemented an application to aid students register for courses, manage documentation, and contact companies of interest
- Designed backend in Java Spring and SQL to provide complete API endpoints as a RESTful service