

Alex Tomala

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Employment History

Apple

June 2020 – Current

Machine Learning Engineer

- Modelling work in PyTorch with a focus on generative models. Work is under NDA
- In charge of deploying ML models developed by the org onto our internal inference framework.
- Wrote large portions of an internal ML framework. Added support for metrics, data preprocessing, and deployment
- Contributed to our paper reading group by giving presentations

Uber ATG

September 2019 – December 2019

Software Engineering Intern

- Improved prediction performance of a neural net model by using a new approach for representing map information
- Analyzed data with Spark to allow others to make informed choices on future experiments

University of Waterloo

May 2019 – August 2019

Deep Learning Research Assistant

- Researched self supervised moving object detection to improve Reinforcement Learning performance in ViZDoom
- Assisted research on using normalizing flows for Bayesian Model-Based Reinforcement Learning

Petuum

May 2018 – August 2018

Software Engineering Intern

- Researched text/caption generation from Chest X-ray images for medical use
- Achieved a 3–4x improvement to the abnormality F1 score compared to published work
- Developed infrastructure in PyTorch to allow for future experimentation with Chest X-ray models

Drive.ai

August 2017 – December 2017

Software Engineering Intern

- Developed a novel Deep Learning algorithm to detect and classify objects around a car
- Implemented a new ground plane filter (using C++) that removed the need for a precomputed map while maintaining similar performance
- Optimized perception code used on the car to cut processing time per frame by 15%

University of Waterloo – Autonomoose

January 2017 – August 2017

Autonomous Driving Research Assistant

- Created the initial perception code on the car using C++ and Python
- Developed a tool in Python to generate 3D environments through augmented OpenStreetMap data
- Devised an algorithm to extend 2D object detections to 3D using a point cloud

Massachusetts Institute of Technology

May 2016 – August 2016

Research Assistant

- Created and wrote about a novel method of determining material synthesis similarity
- Investigated methods to classify scientific papers using Machine Learning methods in Python. Results were published in a coauthored paper in Scientific Data (Nature subjournal)
- Created a web app written in D3.js that reduces annotation time of material synthesis data by 90%

Education

University of Waterloo

September 2015 – April 2020

Bachelor of Mathematics – Major: Computer Science – 94% Major average