SASHA <ALEXANDRE> DOUBOV

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Education

University of Toronto Sep 2020 – Apr 2022
MSc Computer Science *cGPA: 3.93*
- Advisor: Prof. Sanja Fidler

University of Waterloo Sep 2015 – Apr 2020
BASc Electrical Engineering *cGPA: 94%*
- First in Class for graduating cohort

Conference Publications

Scalable Neural Data Server: A Data Recommender for Transfer Learning
NeurIPS 2021
- Tianshi Cao*, **Sasha Doubov***, David Acuna, Sanja Fidler

Pit30M: A Benchmark for Global Localization in the Age of Self-Driving Cars
IROS 2020 *Finalist Best Application Paper*
- Julieta Martinez, **Sasha Doubov**, Ioan Andrei Bârsan, Shenlong Wang, Gellért Máttyus, Raquel Urtasun

Workshop Publications

How many trained neural networks are needed for influence estimation in modern deep learning?
NeurIPS 2022 I Can't Believe It's Not Better Workshop
- **Sasha Doubov**, Tianshi Cao, David Acuna, Sanja Fidler

Studying BatchNorm Learning Rate Decay on Meta-Learning Inner-Loop Adaptation
NeurIPS 2021 Meta-learning Workshop
- Alexander Wang*, Gary Leung*, **Sasha Doubov***

Experience

Cohere Oct 2022 – Mar 2023
Machine Learning Intern *Toronto*
- Exploring structured pruning algorithms to improve model efficiency for Large Language Models (LLMs)

Cerebras Systems Apr 2022 – Aug 2022
Research Intern *Toronto*
- Investigated unstructured pruning algorithms early in training to reduce total training compute
- Benchmarked popular pruning algorithms and explored an alternating optimization algorithm between supermask optimization and SGD weight updates

University of Toronto & Vector Institute Sep 2020 – Apr 2022
Graduate Researcher *Toronto*
- Studied the stability of influence estimation, which measures the effect of training examples on test performance, for CNNs

- Worked on a data recommendation system for transfer learning in computer vision, which can scale to a large number of data sources, including out-of-domain datasets such as medical and satellite images
- Investigated the effects of batch normalization on MAML and developed learning rate updates to encourage intermediate layer adaptation
- Explored self-supervised contrastive learning for dense representation learning

Uber ATG (Prof. Raquel Urtasun) Sep 2019 - Dec 2019 & Jan 2019 – Jul 2019
Research Intern *Toronto*

- Developed novel deep learning algorithms for large-scale retrieval-based localization using LiDAR
- Explored multiple forms of pointcloud representations with various neural network models
- Formally analyzed the limitations of existing image and LiDAR-based retrieval methods to improve our model's performance
- Curated a large, diverse dataset using Spark and Hadoop

University of Waterloo (Prof. Srinivasan Keshav) Jan 2018 – Dec 2018
Research Assistant *Waterloo*

- Used CNNs and traditional CV methods to find office occupancy in order to reduce office lighting usage
- Used the Intel Movidius Stick and Raspberry Pi for accelerated inference when deploying the smart lighting system prototype

Intel May 2018 – Aug 2018
Software Engineering Intern *Toronto*

- Proposed and led the migration from Perforce to Git for a team of 35 developers
- Developed a Jenkins CI pipeline for GitHub PR status checks, with Python steps to query a REST API and generate XML test results

University of Waterloo (Prof. Oleg Michailovich) May 2017 – Dec 2017
Research Assistant *Waterloo*

- Developed a pre-processing pipeline for MRI images in Python for Alzheimer's disease research

Intel Sep 2017 – Dec 2017
Software Engineering Intern *Toronto*

- Developed a graph representation of device RTL using Python to accelerate the team's device bring-up

Campus Activities

Teaching Assistant Fall 2021, 2020
CSC 311 Introduction to Machine Learning

Awards

Sandford Fleming Award for Academic Excellence	2020
Gerry Heckman Scholarship	2020
First in Class Engineering Scholarship	2020, 2018
Waterloo North Hydro Electrical Engineering Scholarship	2019
President's Research Award	2018
Hatch Entrance Scholarship	2016
University of Waterloo President's Scholarship of Distinction	2016

Skills

Languages: Python, C/C++, Java, MATLAB
Frameworks & Tools: PyTorch, Jax, Tensorflow, Git, Spark, Hadoop