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STUDIES

September 2021 – present

Ph.D. student at Institute of Science and Technology Austria (ISTA)

Distributed Algorithms and Systems Group (DAS-Lab), supervised by Dan Alistarh

Research topic: Efficient Optimization for Deep Learning (low-memory optimization and model pruning)

October 2019 – February 2020

Erasmus+ mobility (Master's level)

Faculty of Computer Science, Mathematics and Applied Mathematics

University Grenoble Alpes, Grenoble, France

October 2018 – July 2020

Master's of Advanced Studies in Computer Science (Research)

Faculty of Computer Science

University "Alexandru Ioan Cuza" from Iași, Romania

- 1st year grade: 9.75 / 10
- 2nd year grade: 9.10 / 10

Master's thesis:

A new adversarial attack that slows down decision making process in multi-exit deep neural networks is the result of the internship project from summer of 2019 started at University of Maryland and continued in March-July 2020. As a result, this work turned into a research paper published at **ICLR 2021** as spotlight.

★ Keywords: Adversarial Machine Learning, Deep Neural Networks, Optimization, Python, PyTorch

October 2014 – July 2018

Bachelor's Degree in Computer Engineering

Faculty of Automatic Control and Computer Engineering

Technical University "Gheorghe Asachi" Iași, Romania

- 1st year grade: 9.81 / 10
 - 2nd year grade: 9.68 / 10
 - 3rd year grade: 9.91 / 10
 - 4th year grade: 9.76 / 10
- ★ Always ranked in top 3% students each year

Bachelor's thesis:

Traffic signs and road lanes detection and classification for an autonomous driving car at small scale. Participated in the "Electromobility" student contest in 2017 (5th place) and 2018 (2nd place) with a team of 3 and 4 members in total. Designed and implemented vision and steering functionalities of the car: used the Haar Cascade classifier to detect traffic signs and a Convolutional Neural Network (adapted from the [NVidia's paper](#)) to obtain steering decisions. Two short videos with our self-driving car:

- on the track it was trained on: 1) <https://youtu.be/6GwoaJXw8vQ>, 2) <https://youtu.be/RCGOVQTgiKQ>
- on a new, previously unseen track: <https://youtu.be/kIdHWN1AKY8?t=242>

WORK EXPERIENCE

December 2020 – August 2021

Research Scientist at Amazon. Worked on Anomaly Detection from large databases. The project goal was to detect anomalous actions from a chain of discrete actions for each individual user of different services.

★ Keywords: Deep Learning, TensorFlow, AWS, SQL

July 2019 – September 2019

Cybersecurity Research Intern at University of Maryland Institute of Advanced Computer Science (UMIACS), USA. Conducted research in Adversarial Machine Learning, supervised by prof. Tudor Dumitras and two of his PhD students at that time. This project turned into a spotlight paper accepted at ICLR 2021.

July 2018 – October 2018

Research Scientist Intern at Amazon as part of the Cloud Tune team which was responsible for the AWS Auto Scaling Service. Trained DeepAR models (Recurrent Neural Network based on LSTM) for time series to obtain more accurate predictions used for the auto scaling service.

★ Keywords: DeepAR, AWS (Sage Maker, S3), Spark (Python, Scala)

July 2017 – October 2017

Machine Learning Engineer Intern at Amazon as part of Amazon Robotics team. Developed a model to predict the time to failure of robots inside fulfillment centers and classifying hardware/software errors that may occur during robots' operation, based on their previously logged information.

★ Keywords: Machine Learning, MySQL, Python, Scikit-Learn

ACTIVELY MAINTAINED GITHUB PROJECTS

[ISTA-DASLab-Optimizers](#)

Managing a GitHub repository containing all stochastic optimizers for Deep Learning developed in our research group at ISTA. The goal is to provide an official PyTorch implementation and the associated CUDA kernels for each optimization method, allowing easy experimentation and bug fixing. It is installable via **`pip install ista-daslab-optimizers`**

[GridSearcher](#)

Developed a Python library to speed up the hyper-parameter tuning process. The user has to specify the parameter grids and GridSearcher launches jobs in parallel over the cartesian product of parameter grids and uses a basic GPU management approach. It is designed for machines where users have direct ssh access. It is installable via **`pip install gridsearcher`**
