



Education

MS | Computer Science

University of Freiburg | 2017

- Research: Computer Vision, Machine Learning
- Advisor: Thomas Brox
- Collaborators: Wojciech Samek
- GPA: 3.75 (US) - 1.6 (German)

BS | Computer & Communications Engineering

Alexandria University | 2014

- CS GPA: 3.48
- Concentration in AI/Computer Vision

Skills

Programming Languages

Proficient

Python

Experienced

C • C++ • CUDA • Java

Machine Learning

Frameworks

PyTorch • Keras • Caffe

Tensorflow • Torch7

Algorithms

Attention • Autoencoders

GANs • CNNs • RNNs

Tools

Containerization

Kubernetes • Singularity • Docker

Cloud & Distributed

AWS • Spark

HPC

Slurm • SGE • TORQUE

OS

Linux • Mac • Windows

Languages

Fluent

English • Arabic

Basic

German • French

Related Activities

Reviews

I reviewed papers for ICML 2020, AAAI 2020, ICIP 2020, MICCAI 2019, ICASSP 2019, ACL 2019, IEEE-Cybernetics 2019.

Trivia

I initially learned Kubernetes by running 50+ services on a 4-node multi-architecture (x86 and ARM) cluster at home.

Experience

Meta | Machine Learning Engineer

London, United Kingdom — Nov. 2021 - Present

Zalando Payments GmbH | Machine Learning Engineer

Berlin, Germany — Nov. 2020 - Oct. 2021

- I was responsible for developing and leading initiatives in a XFN team for ML real-time payment risk assessment for Zalando's 45M customers in 18 markets.

Fraunhofer HHI | Machine Learning Researcher

Berlin, Germany — Nov. 2017 - Oct. 2020

- Led and developed the communication services for a pollution forecasting project with €3.8M budget (**SAUBER**): including an ML API, a real-time messaging protocol, and automated the ML back-end pipeline resulting in a 24x reduction in response time.
- Create the first synthetic dataset for *automatic* quantitative evaluation of model interpretability methods on visual question answering (VQA) [Dataset/Code🔗].
- Implement compression methods for MobileNet, reducing hyperparameters by 51% without performance loss. This is now part of the NNR MPEG standard.
- Evaluate ML models on decoder parameter estimation for the H.266/VVC MPEG video coding standard.
- Co-manage a multi-node multi-GPU cluster used by the entire ML group.

Fraunhofer HHI | Machine Learning Research Assistant

Berlin, Germany — Feb. 2017 - Oct. 2017

- Developed a novel attention mechanism for multi-modal tasks (VQA) performing 9.7% better than traditional attention mechanisms .
- **Demo**🔗 exhibited at CEBIT18, Tagesspiegel 2018, LNDW 2018, LNDW 2019, MS Wissenschaft 2019 & ScienceStation 2019.

SRTA City - Informatics Institute | Research Assistant

Alexandria, Egypt — Oct. 2014 - Mar. 2015

- Designed and coded a novel GPU FFT-based convolutional neural network framework, resulting in superior performance compared to other frameworks (Caffe, Torch7, Theano) for large filters.
- Developed a custom GPU-accelerated real-time object tracking & navigation system performing 13x faster than an equivalent OpenCV implementation.

IRON Labs | Full Stack Software Engineer

Alexandria, Egypt — Sep. 2012, Nov. 2013

- Co-designed and developed a clinic management software from the ground up, including requirement analysis, software design, implementation, and testing.
- Created and executed software test units for ERP software.

Publications

- 🎓 Google Scholar