Christoph Hofer

PostDoc, machine learning researcher

contact

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https://c-hofer.github.io/

languages

german (native)
english (fluent)
french (basic)

programming

Python,
C++, CUDA, C
C#, SQL

ai

deep learning,
computer vision,
graph classification,
topological data analysis

tools

pytorch, sklearn,
pandas, jupyter, SciPy

productivity

Linux, VsCode, git, gitHub,
latex

math

algebraic topology,
general topology,
measure theory,
probability theory

timeline

2007–2014	**Masters** of Science **in Mathematics**	University of Salzburg
2014–2015	**Software engineer** and **data scientist**	COPA-DATA group
2015–2020	**PhD** in **Computer Science**	University of Salzburg
2020 –	**Postdoc** FWF grant Deep Homological Learning	University of Salzburg

about me

Curious mind drawn to the the field of artificial intelligence. My inherent motivation goes beyond increasing performance in a particular application but is understanding the hidden mechanics behind artificial learning to allow for more understandable and reliable AI systems. Passionate engineer with 5+ years of experience in data science and development. Open source and python enthusiast with an urge for speed via C++ and CUDA.

interests

professional: machine learning, mathematics, software development, software architecture, algorithms
personal: rock climbing, hiking, gaming, running, camping

projects

Zenon Analyzer. Real time reporting software for scada systems. Developed by COPA-DATA group.

torchph. Extension package for pytorch. This package is a product of my doctoral studies and, as a highlight, contains the first differentiable GPU implementation of the persistent homology algorithm.

publications

ISBI'17	Simple domain adaptation for cross-dataset analyses of brain MRI data	oral
IPMI'17	Constructing Shape Spaces from a Topological Perspective	oral
NeurIPS'17	Deep Learning with Topological Signatures	poster
ICML'19	Connectivity-optimized representation learning via persistent homology Learning	poster
JMLR'19	Learning Representations of Persistence Barcodes	

preprints

ArXiv	Graph Filtration Learning	poster
ArXiv	Topologically Densified Distributions	poster

awards & grants

IPMI'17	Travel grant
NeurIPS'17	Travel grant
ICML'17	Travel grant
ICML'19	Top 5% reviewer