

LASSE F. WOLFF ANTHONY

Computer scientist specializing in machine learning ◊ Danish national
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EDUCATION

ETH Zürich

Sep 2020 – Mar 2023 (expected)

MSc ETH in Computer Science

Zürich, Switzerland

Major in Machine Intelligence and minor in Programming Languages and Software Engineering.

Thesis: “Data Marketplaces and Strategies”

GPA: 5.3/6.0

University of Copenhagen

Sep 2017 – Jun 2020

BSc in Computer Science

Copenhagen, Denmark

Specialization in Data Science with coursework focused on machine learning.

Thesis: “The Carbon Footprint of Training Deep Learning Models.”

GPA: 11.8/12.0

University of California, Merced

Aug 2019 – Dec 2019

UCEAP Reciprocal Program

Merced, California, USA

Exchange study part of my BSc CS at UCPH with coursework focused on machine learning.

GPA: 4.0/4.0

EXPERIENCE

University of Copenhagen

Feb 2020 – Jul 2020

Teaching Assistant

Copenhagen, Denmark

- TA for the course Data Science (2019/2020): Databases, introduction to machine learning and data science with an emphasis on natural language processing and data pipelines.
- Main duties included organizing and teaching of lab sessions.

Nykredit

Oct 2018 – Jan 2020

Software Developer

Copenhagen, Denmark

- Part of an agile C#-development team using Scrum and Kanban at one of Denmark’s leading financial institutions.
- Developed and maintained financial software for mortgage loans in .NET Framework significantly reducing time spent by in-house financial advisors to process and evaluate loan applications.
- Developed and maintained a web-based ASP.NET tool for ensuring compliance across all of Nykredit IT with the data protection and privacy law GDPR.
- Lead the effort to set up a continuous deployment pipeline using a Jenkin CI server integrated with BitBucket completely eliminating manual work associated with integration testing and deployment.

PUBLICATIONS

- [1] L. F. W. Anthony, B. Kanding, and R. Selvan, “Carbontracker: Tracking and predicting the carbon footprint of training deep learning models,” in *ICML Workshop on Challenges in Deploying and monitoring Machine Learning Systems*, Jul. 2020.
- [2] R. Selvan, N. Bhagwat, L. F. W. Anthony, B. Kanding, and E. B. Dam, “Carbon footprint of selecting and training deep learning models for medical image analysis,” in *International Conference on Medical Image Computing and Computer-Assisted Intervention – MICCAI 2022*, 2022.

HIGHLIGHTED PROJECTS

Carbontracker

github.com/lfwa/carbontracker

Open-source tool released under the MIT license for tracking and predicting the energy consumption and carbon emissions of training deep learning models in Python. Corresponding publication [1]. It has been downloaded >55k times on the Python Package Index (PyPI) as of writing.

Reinforced Graph Neural Networks for Collaborative Filtering

github.com/lfwa/reinforced-gnn

Introduced a novel architecture to generate predictive compatibility scores for never-before-seen content in recommendation systems. The architecture combines the strength of graph-extracted embeddings in a graph neural network with the generalization power of a deep feed-forward network and adds “reinforcements” providing additional information to the network.

Static Taint Analysis For Ethereum Contracts

github.com/lfwa/vulnerable-ethereum-contracts

Designed and implemented a static taint analyzer in Datalog for Ethereum smart contracts. The analyzer detects vulnerable contracts that may be deleted from the blockchain and have all remaining cryptocurrency transferred to an untrusted address.

Supporting Alternative SMT Solvers in Viper

github.com/viperproject

Added support for multiple SMT solvers, such as cvc5, in the symbolic-execution based automated verification backend written in Scala for the program verification tool chain and infrastructure, Viper.

RELEVANT COURSEWORK

Machine Learning & Big Data

Advanced Machine Learning
Causal Representation Learning
Natural Language Processing
Probabilistic AI
Reliable & Trustworthy AI
Computational Intelligence
Big Data

Mathematics

Statistics & Probability Theory
Discrete Mathematics
Linear Algebra
Modelling & Analysis of Data
Algorithms & Data Structures
Randomized Algorithms

Software Engineering

Program Verification
Program Analysis for System
↳ Security and Reliability
Concepts of Object-Oriented
↳ Programming
Computer & Network Security

SKILLS

Programming Languages

Python, C#, SQL, Rust, Scala, F#, Java, C, Datalog

Databases

PostgreSQL, Oracle

Frameworks and Tools

PyTorch, TensorFlow, Gym(nasium), scikit-learn, NumPy, pandas, Matplotlib, Git, Spark, Hadoop, Neo4j