

Karlson Pfannschmidt

MACHINE LEARNING RESEARCHER

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Experience

Smart-GM, Software Innovation Campus Paderborn

RESEARCH ASSISTANT

Paderborn

2020–present

- Development of an assistance system for the recommendation of business models.
- Design of machine learning techniques applicable for learning from business model data.

Intelligent Systems and Machine Learning Group, Prof. Hüllermeier

RESEARCH ASSISTANT

Paderborn

2015–2020

- Development and evaluation of new neural network architectures capable of modelling preferences (choices and rankings).
 - Implementation of a simulation pipeline to compare a variety of machine learning models in a cluster computing environment.
 - Establish the expressiveness of the proposed approaches by theoretical analysis.
- Work on an algorithm for multi-label classification in a large-scale environment.
- Devising a method of evaluating the importance of laboratory tests in medicine using game-theoretical concepts.

Distributed Systems Group, Prof. Scheideler

STUDENT RESEARCH ASSISTANT

Paderborn

2011–2015

- Empirical analysis of bandit trust algorithms.
- Development of a robust Bayesian bandit algorithm.

Skills

Machine Learning Neural Networks, Gaussian Processes, Bayesian Optimization, Reinforcement Learning, Preference Learning

MLOps PyTorch, TensorFlow, scikit-learn, MLFlow, SQLAlchemy

DevOps Docker, Git, GitHub Actions, Singularity, TravisCI

Programming Python, R, SQL, C++, JAVA, LaTeX

Languages German (native), English (fluent), French (basic), Spanish (basic)

Education

Doctorate Degree (in progress)

PADERBORN UNIVERSITY

Paderborn, Germany

2015–present

Master of Computer Science

PADERBORN UNIVERSITY

Paderborn, Germany

2012–2015

Bachelor of Computer Science

PADERBORN UNIVERSITY

Paderborn, Germany

2008–2012

Publications

CONFERENCE PROCEEDINGS

Learning Choice Functions via Pareto-Embeddings

Karlson Pfannschmidt, Eyke Hüllermeier

KI, 2020

Extreme F-measure Maximization using Sparse Probability Estimates

Kalina Jasinska, Krzysztof Dembczynski, Róbert Busa-Fekete, Karlson Pfannschmidt, Timo Klerx, Eyke Hüllermeier

ICML, 2016

Evaluating Tests in Medical Diagnosis: Combining Machine Learning with Game-Theoretical Concepts

Karlson Pfannschmidt, Eyke Hüllermeier, Susanne Held, Reto Neiger

IPMU, 2016

PREPRINTS

Efficient time stepping for numerical integration using reinforcement learning

Michael Dellnitz, Eyke Hüllermeier, Marvin Lücke, Sina Ober-Blöbaum, Christian Offen, Sebastian Peitz, Karlson Pfannschmidt
2021

Learning Choice Functions: Concepts and Architectures

Karlson Pfannschmidt, Pritha Gupta, Eyke Hüllermeier
2020

Deep Architectures for Learning Context-dependent Ranking Functions

Karlson Pfannschmidt, Pritha Gupta, Eyke Hüllermeier
2018

Extracurricular Activity

Leela Chess Zero Open Source Project

CORE MEMBER

[lczero.org](#)

Jan. 2020–present

- Developed a general purpose optimization library with application to computer chess.
- Active contributor to the open source project.

Presentation

TNG | Big Techday 12

[Munich, Germany](#)

CO-PRESENTER FOR <LCZERO, THE NEURAL NETWORK-BASED CHESS ENGINE>

June 7th, 2019

- Introduced the inner workings of the chess engine LCZero to a tech audience.
- Present the differences between traditional chess engines and neural network based ones.

Program Committees

2021 **External Reviewer**, International Conference on Machine Learning (ICML)

[Vienna, Austria](#)

2018 **Local Chair**, European Conference on Data Analysis

[Paderborn,
Germany](#)