

André Artelt



PERSONAL DATA

PLACE AND YEAR OF BIRTH: Bielefeld, Germany | 1994
EMAIL: aartelt@techfak.uni-bielefeld.de
WEBSITE: <https://andreartelt.github.io>
LANGUAGES: German (native), English (fluent)

WORKING EXPERIENCE

2019 - PRESENT | *Researcher* at BIELEFELD UNIVERSITY, GERMANY
Machine Learning Group at Faculty of Technology.

2014 - 2019 | *Teaching assistant* at BIELEFELD UNIVERSITY, GERMANY
Teaching assistant (TA) for different computer science courses: Introduction to Machine Learning, Applied Optimization, Algorithms in Computer Science, Algorithms and Data structures, Introduction to OOP in Java.

2013 - 2019 | *Working student in the software development department* of SCHÜCO DIGITAL GMBH (SCHÜCO INTERNATIONAL KG), Bielefeld, Germany
Software development and information retrieval. Used technology: C#, .NET, C++, (no)SQL, JavaScript und Python.

AFFILIATIONS

2022 - PRESENT | *Visiting Researcher* at UNIVERSITY OF CYPRUS, CYPRUS
Department of Electrical and Computer Engineering / KIOS Research and Innovation Center of Excellence.

EDUCATION

2019 - 2023 *PhD in Machine Learning / Dr. rer. nat.*, BIELEFELD UNIVERSITY
2017 - 2019 *Intelligent Systems / Master of Science*, BIELEFELD UNIVERSITY
2013 - 2017 *Cognitive Informatics / Bachelor of Science*, BIELEFELD UNIVERSITY

PUBLICATION RECORD

- H-INDEX: 11
- I10-INDEX: 15
- NUMBER OF CITATIONS: 482

Date: 07.10.2024 (h-Index and number of citations according to Google Scholar)

AWARDS 🏆

2024 AI for CI @ ICJAI 2024, Best Paper Award
2019 *Outstanding TA award* (Course: INTRODUCTION TO MACHINE LEARNING)
2018 *Outstanding TA award* (Course: INTRODUCTION TO MACHINE LEARNING)
2015 *1. Price group project* (Project seminar on software engineering)

MOST IMPORTANT PUBLICATIONS

- XAI @ ICJAI 2024 *Analyzing the Influence of Training Samples on Explanations*
A. Artelt, B. Hammer
- XAI @ IJCAI 2023 *"Explain it in the Same Way!" – Model-Agnostic Group Fairness of Counterfactual Explanations*
A. Artelt, B. Hammer
- NEPL 2022 *Contrasting Explanations for Understanding and Regularizing Model Adaptations*
A. Artelt, F. Hinder, V. Vaquet, R. Feldhans, B. Hammer
- IEEE SSCI 2021 *Evaluating Robustness of Counterfactual Explanations*
A. Artelt, V. Vaquet, R. Velioglu, F. Hinder, J. Brinkrolf, M. Schilling, B. Hammer
- ICANN 2020 *Convex density constraints for computing plausible counterfactual explanations*
A. Artelt, B. Hammer

ORGANIZING & COMMUNITY ACTIVITIES

- AAAI 2025 *Explainable AI in Energy and Critical Infrastructure Systems* (Bridge)
A. Artelt, D. Eliades, A. Korre, F. Leofante, T. Miller, F. Toni
- IJCAI 2024 *All You Ever Need to Know About Counterfactual Explanations: Fundamentals, Methods, & User Studies for XAI* (Tutorial)
A. Artelt, U. Kuhl, M. Keane
- WDSA CCWI 2024 *Introduction to the EPANET-Python Toolkit (EPyT) for Smart Water Network Simulations* (Tutorial)
D. Eliades, S. Vrachimis, M. Kyriakou, **A. Artelt**
- IEEE WCCI 2024 *Machine Learning in Critical Infrastructure* (Special Session)
A. Artelt, C. Alippi, M. Polycarpou, B. Hammer

RESEARCH VISITS

- OCTOBER - DECEMBER 2023 *KIOS - Research and Innovation Center of Excellence University of Cyprus*
Host: Marios Polycarpou
- NOVEMBER 2022 *KIOS - Research and Innovation Center of Excellence University of Cyprus*
Host: Marios Polycarpou

TALKS & PRESENTATIONS

- AMLD EPFL 2024 *Utilizing XAI for Increasing Customers' Repurchase Intentions* (TALK & POSTER)
A. Artelt
- CITIZENSCIENCE 2023 *Vertrauenswürdige KI* (TALK)
A. Artelt
- HerrenhausenConf. 2022 *Explainable AI for Intelligent Machines in Everyday Life* (POSTER)
B. Hammer, **A. Artelt**, et al.
- HNI-Symp.2022 *"What if ..." - Counterfactuals for Explaining Machine Learning Models* (TALK)
A. Artelt
- CITIZENSCIENCE 2020 *Maschinelles Lernen (ML)* (TALK)
A. Artelt
- EEML 2020 *On Counterfactual Explanations of ML Models* (TALK)
A. Artelt

REVIEWER ACTIVITIES

Numerous reviews for several conferences and journals:

- CONFERENCES: *IJCAI, ICML, ICLR, NeurIPS, ECML, xAI, ECAI, IEEE IJCNN, IEEE CAI, HICSS, ICANN, ESANN, ICNCIT*
- JOURNALS: *ACM Computing Surveys, Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Neural Networks and Learning Systems, Proceedings of the IEEE, Cognitive Computation, Engineering Applications of Artificial Intelligence, Data Mining and Knowledge*

Discovery, Artificial Intelligence Review, Scientific Reports, PeerJ, Frontiers in Energy Research (Sustainable Energy Systems and Policies), Journal of Decision Systems

TEACHING EXPERIENCE

Supervision

- NUMBER OF BACHELOR THESES: 9
- NUMBER OF MASTER PROJECTS: 2
- NUMBER OF MASTER THESES: 1

Teaching Assistant

WINTER 2014/15 *Algorithms and Data structures & Functional Programming in Haskell*¹
SUMMER 2015 *Object Orientated Programming in Java*¹
WINTER 2015/16 *Algorithms and Data structures & Functional Programming in Haskell*¹
SUMMER 2016 *Foundations of Artificial Cognition*¹
WINTER 2016/17 *Introduction to Machine Learning*
SUMMER 2017 *Foundations of Artificial Cognition*¹
WINTER 2017/18 *Introduction to Machine Learning*
SUMMER 2018 *Algorithms in Computer Science*¹
WINTER 2018/19 *Introduction to Machine Learning; Applied Optimization*

¹ Course was taught in German.

Organizer of Exercises

SUMMER 2019 *Algorithms in Computer Science*
WINTER 2019/20 *Introduction to Machine Learning*
SUMMER 2020 *Algorithms in Computer Science*
WINTER 2020/21 *Applied Optimization*
SUMMER 2021 *Algorithms in Computer Science*
WINTER 2021/22 *Applied Optimization*
SUMMER 2023 *Algorithms in Computer Science*

COMPLETE LIST OF PUBLICATIONS

Conference Publications

- ATT @ ECAI 2024 *Application of a Multi-instance Counterfactual Explanation Method for Road Safety Analysis* (Workshop)
A. Artelt, A. Gregoriades
- NordiCHI 2024 *Let Me Explain What I Did or What I Would Have Done: An Empirical Study on the Effects of Explanations and Person-Likeness on Trust in and Understanding of Algorithms*
J. Szczuka, A. Horstmann, N. Szymczyk, C. Strathmann, **A. Artelt**, L. Varonina, L.M. Bohnenkamp, N Krämer
- ICANN 2024 *Challenges, Methods, Data – a Survey of Machine Learning in Water Distribution Networks*
V. Vaquet, F. Hinder, **A. Artelt**, I. Ashraf, J. Strotherm, J. Vaquet, J. Brinkrolf, B. Hammer
- XAI @ ICJAI 2024 *Analyzing the Influence of Training Samples on Explanations*
A. Artelt, B. Hammer (Workshop)
- AI for CI @ ICJAI 2024 *A Toolbox for Supporting Research on AI in Water Distribution Networks* (Workshop )
A. Artelt, M. Kyriakou, S. Vrachimis, D. Eliades, B. Hammer, M. Polycarpou
- xAI 2024 *A Two-Stage Algorithm for Cost-Efficient Multi-instance Counterfactual Explanations* (Poster)
A. Artelt, A. Gregoriades
- IEEE SSCI 2023 *Unsupervised Unlearning of Concept Drift with Autoencoders*
A. Artelt, K. Malialis, C. Panayiotou, M. Polycarpou, B. Hammer
- xAI 2023 *For better or worse: The impact of counterfactual explanations' directionality on user behavior in XAI*
U. Kuhl, **A. Artelt**, B. Hammer
- MediaPsych 2023 *Can You Explain Why You Did Not Recommend Something Else? An Experimental Study on the Effects of Contrastive Explanations and Person-Likeness on Trust in and Understanding of Algorithms*
A. C. Horstmann, J. Szczuka, L. Mavrina, **A. Artelt**, C. Strathmann, N. Szymczyk, et al.
- XAI @ IJCAI 2023 *"Explain it in the Same Way!" – Model-Agnostic Group Fairness of Counterfactual Explanations* (Workshop)
A. Artelt, B. Hammer
- IWANN 2023 *Adversarial Attacks on Leakage Detectors in Water Distribution Networks*
P. Stahlhofen, **A. Artelt**, L. Hermes, B. Hammer
- ICEIS 2023 *"How to make them stay?" – Diverse Counterfactual Explanations of Employee Attrition*
A. Artelt, A. Gregoriades
- IDA 2023 *Spatial Graph Convolution Neural Networks for Water Distribution Systems*
I. Ashraf, L. Hermes, **A. Artelt**, B. Hammer
- ICA 2023 *Enhancing the Understanding of Algorithms With Contrastive Explanations: An Experimental Study on the Effects of Explanations and Person-Likeness on Trust in and Understanding of Algorithms*
J. Szczuka, A. C. Horstmann, L. Mavrina, **A. Artelt**, C. Strathmann, et al.
- ICPRAM-2023 *"Why Here and Not There?" – Diverse Contrasting Explanations of Dimensionality Reduction*
A. Artelt, A. Schulz, B. Hammer
- IEEE SSCI 2022 *"Even if ..." – Diverse Semifactual Explanations of Reject*
A. Artelt, B. Hammer
- IDEAL 2022 *Explainable Artificial Intelligence for Improved Modeling of Processes*
R. Velioglu, J.P. Göpfert, **A. Artelt**, B. Hammer
- NCTA 2022 *Explaining Reject Options of Learning Vector Quantization Classifiers*
A. Artelt, J. Brinkrolf, R. Visser, B. Hammer
- ESANN 2022 *Model Agnostic Local Explanations of Reject*
A. Artelt, J. Brinkrolf, R. Visser, B. Hammer
- ESANN 2022 *Improving Zorro Explanations for Sparse Observations with Dense Proxy Data*
A. Mazur, **A. Artelt**, B. Hammer
- ESANN 2022 *Contrasting Explanation of Concept Drift*
F. Hinder, **A. Artelt**, V. Vaquet, B. Hammer
- ICANN 2022 *Taking care of our drinking water: Dealing with Sensor Faults in Water Distribution Networks*
V. Vaquet, **A. Artelt**, J. Brinkrolf, B. Hammer

- ICANN 2022 *SAM-kNN Regressor for Online Learning in Water Distribution Networks*
J. Jakob*, **A. Artelt***, M. Hasenjäger, B. Hammer
- XAI @ IJCAI 2022 *One Explanation to Rule them All — Ensemble Consistent Explanations (Workshop)*
A. Artelt, S. Vrachimis, D. Eliades, M. Polycarpou, B. Hammer
- IEEE IJCNN 2022 *Localization of Concept Drift: Identifying the Drifting Datapoints*
 F. Hinder, V. Vaquet, J. Brinkrolf, **A. Artelt**, B. Hammer
- ACM FAccT 2022 *Keep your friends close and your counterfactuals closer: Improved learning from closest rather than plausible counterfactual explanations in an abstract setting*
 U. Kuhl, **A. Artelt**, B. Hammer
- DGPs 2022 *Let me explain my algorithms: An empirical investigation about the effects of explanations and personhood on trust and understanding*
 J. Szczuka, N. Szymczyk, C. Strathmann, **A. Artelt**, L. Varonina, N. Krämer
- IEEE SSCI 2021 *Evaluating Robustness of Counterfactual Explanations*
A. Artelt, V. Vaquet, R. Velioglu, F. Hinder, J. Brinkrolf, M. Schilling, B. Hammer
- IWANN 2021 *Contrastive Explanations for Explaining Model Adaptations*
A. Artelt, F. Hinder, V. Vaquet, R. Feldhans, B. Hammer
- IEEE IJCNN 2021 *Efficient computation of contrastive explanations*
A. Artelt, B. Hammer
- IUI 2020 *Improving and Evaluating Conversational User Interfaces for Children*
 N. Krämer, J. Szczuka, A. Rosnagel, C. Geminn, S. Kopp, B. Hammer,
 L. Varonina, **A. Artelt**, A. Manzeschke, C. Weber
- ICANN 2020 *Convex density constraints for computing plausible counterfactual explanations*
A. Artelt, B. Hammer
- ICML 2020 *Towards non-parametric drift detection via Dynamic Adapting Window Independence Drift Detection (DAWIDD)*
 F. Hinder, **A. Artelt**, B. Hammer
- ESANN 2020 *Efficient computation of counterfactual explanations of LVQ models*
A. Artelt, B. Hammer
- IDA 2020 *Adversarial attack hidden in plain sight*
 J.P. Göpfert, **A. Artelt**, H. Wersing, B. Hammer

* Shared first authorship.

Journal Publications

- DSS 2024 *Supporting Organizational Decisions on How to Improve Customer Repurchase using Multi-instance Counterfactual Explanations*
A. Artelt, A. Gregoriades
- NEUCOM 2023 *“I do not Know! But Why?” – Local Model-Agnostic Example-based Explanations of Reject*
A. Artelt, R. Visser, B. Hammer
- UAAI 2023 *Interpretable SAM-kNN Regressor for Online Learning on High-dimensional Data*
 J. Jakob, **A. Artelt**, M. Hasenjäger, B. Hammer
- FCOMP 2023 *Let’s Go to the Alien Zoo: Introducing an Experimental Framework to Study Usability of Counterfactual Explanations for Machine Learning*
 U. Kuhl, **A. Artelt**, B. Hammer
- NEPL 2022 *Contrasting Explanations for Understanding and Regularizing Model Adaptations*
A. Artelt, F. Hinder, V. Vaquet, R. Feldhans, B. Hammer
- NEUCOM 2021 *Efficient computation of counterfactual explanations and counterfactual metrics of prototype-based classifiers*
A. Artelt, B. Hammer
- DuD-9 2020 *Kinder als Nutzende smarterer Sprachassistenten
 Spezieller Gestaltungsbedarf zum Schutz von Kindern*
 C. Geminn, J. Szczuka, C. Weber, **A. Artelt**, L. Varonina

Book chapters

- 2024 *Daten aus informatischer Sicht* in Geminn & Johannes, “Europäisches Datenrecht”¹ ¹ English
A. Artelt

version available as: *Data in Computer Science* in Geminn & Johannes, "EU Data Law" (2024), A. Artelt

Other Publications

- GitHub-2024 *EPyT-Flow – EPANET Python Toolkit - Flow*
A. Artelt, M. Kyriakou, S. Vrachimis, D. Eliades, B. Hammer, M. Polycarpou
- 2024 *Konversation mit Künstlicher Intelligenz Gewonnene Erkenntnisse und künftige Herausforderungen*
A. Horstmann, **A. Artelt**, C. Geminn, B. Hammer, S. Kopp, A. Manzeschke, L. Mavrina
C. Strathmann, C. Weber, N. Krämer
- arXiv 2024 *The Effect of Data Poisoning on Counterfactual Explanations*
A. Artelt, S. Sharma, F. Lecué, B. Hammer
- PhD 2023 *Contrasting Explanations in Machine Learning – Efficiency, Robustness & Applications*
A. Artelt
- 2023 *Kann sich künstliche Intelligenz selbst erklären?
Wie Erklärungen aus rechtswissenschaftlicher und ethischer Sicht gestaltet sein sollten und was Psychologie und Informatik dazu beitragen können*
A. Horstmann, N. Krämer, C. Geminn, T. Bile, C. Weber, A. Manzeschke,
L. Mavrina, S. Kopp, **A. Artelt**, B. Hammer
- 2023 *Gesundheits-Apps & Digitale Gesundheitsanwendungen (DiGAs) aus ethischer, rechtlicher, psychologischer und informatischer Perspektive*
A. Artelt, C. Geminn, et al.
- 2022 *Faire Algorithmen und die Fairness von Erklärungen:
Informatische, rechtliche und ethische Perspektiven*
A. Artelt, C. Geminn, et al.
- arXiv 2022 *Precise Change Point Detection using Spectral Drift Detection*
F. Hinder, **A. Artelt**, V. Vaquet, B. Hammer
- arXiv 2021 *Convex optimization for actionable & plausible counterfactual explanations*
A. Artelt, B. Hammer
- 2021 *Können Kinder aufgeklärte Nutzer* innen von Sprachassistenten sein?
Rechtliche, psychologische, ethische und informatische Perspektiven*
J. Szczuka, **A. Artelt**, C. Geminn, et al.
- arXiv 2019 *A probability theoretic approach to drifting data in continuous time domains*
F. Hinder, **A. Artelt**, B. Hammer
- 2019 *KI-basierte Sprachassistenten im Alltag:
Forschungsbedarf aus informatischer, psychologischer, ethischer und rechtlicher Sicht*
N. Krämer, **A. Artelt**, C. Geminn, et.al.
- arXiv 2019 *On the computation of counterfactual explanations – A survey*
A. Artelt, B. Hammer
- GitHub 2019 *CEML - Counterfactuals for Explaining Machine Learning models – A Python toolbox*
A. Artelt
- 2019 *Lecture Notes on Applied Optimization*
B. Paaßen, **A. Artelt**, B. Hammer
- 2019 *Introduction to Machine Learning – Supplementary notes*
A. Artelt