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: 9
- Number of citations: 347
- Number of publications: 51

Date: 14.03.2024 (h-Index and number of citations according to Google Scholar)

Awards

Winter term 2018/19 *Outstanding TA award* (Course: Introduction to Machine Learning)
Winter term 2017/18 *Outstanding TA award* (Course: Introduction to Machine Learning)
Summer term 2015 *1. Price group project* (Project seminar on software engineering)

Most Important Publications

XAI @ IJCAI-2023	*"Explain it in the Same Way!" – Model-Agnostic Group Fairness of Counterfactual Explanations* **A. Artelt**, B. Hammer
NEUCOM-2023	*"I do not Know! But Why?" – Local Model-Agnostic Example-based Explanations of Reject* **A. Artelt**, R. Visser, B. Hammer
XAI @ IJCAI-2022	*One Explanation to Rule them All — Ensemble Consistent Explanations* **A. Artelt**, S. Vrachimis, D. Eliades, M. Polycarpou, B. Hammer
NEPL-2022	*Contrasting Explanations for Understanding and Regularizing Model Adaptations* **A. Artelt**, F. Hinder, V. Vaquet, R. Feldhans, B. Hammer
SSCI-2021	*Evaluating Robustness of Counterfactual Explanations* **A. Artelt**, V. Vaquet, R. Velioglu, F. Hinder, J. Brinkrolf, M. Schilling, 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

Reviewer Activities

Numerous reviews for several conferences and journals:

- Conferences: *IJCAI, ICML, ICLR, NeurIPS, ECML, IEEE IJCNN, IEEE CAI, 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, Frontiers in Energy Research (Sustainable Energy Systems and Policies), Journal of Decision Systems*

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**

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 Progamming 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 given 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 Puplications

ICEIS-2024 *Application of a Multi-instance Counterfactual Explanation Method for Road Safety Analysis* (Abstract)
A. Artelt, A. Gregoriades

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

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

IJCNN-2022 *Localization of Concept Drift: Identifying the Drifting Datapoints*
F. Hinder, V. Vaquet, J. Brinkrolf, **A. Artelt**, B. Hammer

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

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

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. Rossnagel, 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

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 smarter 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]
A. Artelt

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

Other Publications

arXiv-2024 *A Two-Stage Algorithm for Cost-Efficient Multi-instance Counterfactual Explanations*
A. Artelt, A. Gregoriades

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