# Ahcène Boubekki

Postdoctoral Researcher
Tullinsgade 24
1618, Copenhagen, Denmark

ahcene.boubekki@proton.me
https://ahcene-b.github.io

fpVjl4gAAAAJ 0000-0003-1606-1513 151/2083

## Contents

**Research Questions** 1
**Research Positions** 2
**Education** 2
**Software** 3
**Administrative Activities** 3
**Grants** 3
**Collaborations** 4
**Outreach** 4
**Languages** 4
**Supervision** 5
**Teaching** 6
**Talks and Poster Presentations** 7
**Publications** 8
**References** 10

## Research Questions

| | |
|---|---|
| Explainable AI: | What concepts does an encoder learn during training? Which ones are important for the downstream task? Can we detect biases at the embedding or concept level? |
| Trustworthy AI: | How can we inspect and audit a model from its internal representation? Does a foundation model hold the features a task needs, and if not, can we seed them without retraining it? |
| Representation Learning: | What is a good neighborhood for self-supervised learning? Can we build a model from pretrained blocks? |

**Keywords:** Trustworthy AI, Mechanistic Interpretability, Explainable AI, Representation Learning, Unsupervised Methods, Deep Learning, Machine Learning

## Research Positions

| | |
|---|---|
| **since 2025** | Postdoctoral Researcher, *Department of Mathematical Sciences*, University of Copenhagen and Pioneer Centre for AI, Copenhagen, Denmark. |
| **Nov. 2024** | Research Visit, *Department of Mathematical Sciences*, University of Copenhagen, Copenhagen, Denmark. |
| **Aug. 2024** | Research Visit, *Division of Systems and Control*, Uppsala University, Uppsala, Sweden. |
| **2023-2025** | Postdoctoral Researcher, *Machine Learning and Uncertainty*, Physikalisch-Technische Bundesanstalt and TU Berlin, Berlin, Germany. |
| **2020-2023** | Postdoctoral Researcher, *Machine Learning Group*, UiT The Arctic University of Norway, Tromsø, Norway. |
| **Jan. 2019** | Research Visit, *Machine Learning Group*, UiT The Arctic University of Norway, Tromsø, Norway. |
| **2016-2020** | Research Associate, *Machine Learning Leuphana Lüneburg*, Leuphana University of Lüneburg, Lüneburg, Germany. |
| **2015** | Research Associate, *Knowledge Mining and Assessment*, TU Darmstadt-ULB Darmstadt, Darmstadt, Germany. |
| **2014** | Research Associate, *Technology Based Assessment*, DIPF-Leibniz Institute for Research and Information in Education, Frankfurt am Main, Germany. |
| **2013-2014** | Research Associate, *Methoden der Empirischen Bildungsforschung*, TUM School of Education, Munich, Germany. |

## Education

| | |
|---|---|
| **2016–2020** | Ph.D. in Computer Science, Leuphana University, Lüneburg, Germany.<br>*Analysis of User Behavior*<br>Main Supervisor: Ulf Brefeld. |
| **2009–2012** | Master, Fundamental Mathematics, UPMC, Paris, France.<br>*2nd Year Thesis: Enumerative Tropical Geometry.*<br>Main Supervisor: Jean Jacques Risler.<br>*1st Year Thesis: Around cubic surfaces and their 27 lines.*<br>Main Supervisor: Andreas Höring. |
| **2009-2011** | Master Merit Scholarship, UPMC, Paris, France. |
| **2010** | CAPES Externe de Mathématiques, France. |
| **2008–2009** | Bachelor, Mathematics, with Honors, UPMC, Paris, France. |
| **2008** | Admitted as free auditor at the ENS Cachan (Renounced). |
| **2005–2008** | Preparatory classes MPSI/MP, Lycée Chaptal, Paris, France. |
| **2005** | Baccalauréat (Science), with Honors, Lycée Jean Zay, Aulnay sous bois, France |
| **2004** | Academic Mathematics Olympiad: ranked 8th, Lycée Jean Zay, Aulnay sous bois, France. |

## Software

- **nave-xai**, open-source Python package (MIT licence), on PyPI.
  *NAVE explanations of CNN and ViT encoders, extended to time-series and text encoders. Runs on CPU and GPU. Includes a GIMP 3 plugin.*
- **NAVE Explorer**, web application (PyTorch, FastAPI), in development.
  *Fits concepts on a dataset, explains predictions, and lets the user edit a model's features, concepts or readout and measure the effect. Supports CNNs, ViTs, CLIP, vision-language models and YOLO detectors.*

## Administrative Activities

| | |
|---|---|
| **2026** | D3A workshop: *Tools and Methods for Operationalizing the AI Act in Research and Industry.* Copenhagen, Denmark. |
| **May 7th 2026** | Organizer YODA Workshop, Copenhagen, Denmark. |
| **2025** | D3A workshop: *Statistical perspectives on machine learning for health applications.* Copenhagen, Denmark. |
| **2021-2023** | Organizer in charge of the reviewing process of the Northern Lights Deep Learning Conference `nldl.org`, Tromsø, Norway. |
| **since 2015** | Regular reviewer for ICML, NeurIPS, ICLR, ECML, Machine Learning Journal, DMKD... |
| **2026** | Gold Reviewer, ICML 2026. |
| **2023** | Best Reviewer, ECML PKDD 2023. |
| **2014** | IZB Doctoral student representative at DIPF, Frankfurt, Germany. |
| **2010** | Master student representative to the Central Councils of UPMC, Paris, France. |
| **2009-2011** | Student representative to the Math Department's Board of UPMC, Paris, France. |

## Grants

| | |
|---|---|
| **2026** | DFF Sapere Aude: Research Leader, University of Copenhagen, Copenhagen, Denmark. (Oct. 2026, decision pending) |
| **2026** | DDSA Small Event Grants, University of Copenhagen, Copenhagen, Denmark: 40,000DKK |
| **2025** | Horizon Europe, Assessment methodologies for General Purpose AI capabilities and risks (rejected). |
| **2024** | DDSA Visit Grants, University of Copenhagen, Copenhagen, Denmark: 15,000DKK |
| **2024-2025** | NAISS Small Compute, Berzelius-2024-259, National Supercomputer Centre, Sweden. |
| **2023** | Incentiv call 2023, Fram Centre, Tromsø: 250,000 NOK (rejected). |
| **2022** | Declaration of Innovation for paper [8], UiT, Norway. |
| **2019** | Travel funds, Junior Research Fund of the Leuphana University, Lüneburg, Germany: 800EUR. |
| **2009-2011** | Master Merit Scholarship, UPMC, Paris, France. |

## Collaborations

- **Christine Stratmann**, International Paediatric Brugada registry, since 2026.
  *The collaboration aims to investigate the use of NAVE for Brugada syndrome, a rare inherited arrhythmic condition that can lead to sudden death at a young age.*
- **Antônio H. Ribeiro**, Uppsala University
  **Arunashis Sau** and **Konstantinos Patlatzoglou**, Imperial College London, 2024-2026.
  *The collaboration aimed to investigate the usage of explainable methods for electrocardiograms.*
- **Line K. H. Clemmensen**, University of Copenhagen, since 2022.
  *The collaboration focuses on the explanation and evaluation of deep models and their potential use for health.*
- **Sebastian Mair**, Linköping University, since 2020.
  *Colleague of mine during my Ph.D. We are now investigating efficient representation learning for segmentation, explanation and privacy. We have been granted computation resources on the Swedish Berzelius NSC (project* Berzelius-2024-259*).*
- **Heidi Ahonen**, Norwegian Polar Institute, 2022-2023.
  *The collaboration investigated the usage of machine learning techniques for detection of marine mammals vocalization and vessels in underwater recordings.*
- **Marina Höhne**, ATB Potsdam, 2022-2023.
  *Co-supervisor of Srishti Gautam, we investigated prototypical self-explainable models, their formalization and their evaluation.*
- **GE Healthcare** via Visual Intelligence, Norway, 2021-2025.
  *Industrial partners of Durgesh Singh's PhD. The project was about the automatic measurement of the left ventricle from echocardiography data using semi-supervised learning.*
- **Tore Solberg** and **Tor Ingebrigtsen**, University Hospital of North Norway, 2021-2023.
  *The collaboration aimed to analyze the Norwegian spine surgery registry, for which both medical doctors are responsible. I pre-processed the data and presented preliminary analyses which are now in the hands of the SPKI.*

## Outreach

| | |
|---|---|
| **November 24th, 2026** | *Practices of Trustworthy AI*, MeetUps, Copenhagen, Denmark.<br>`https://luma.com/claude-bdg0` |
| **November 4th, 2026** | *AI Denmark 2026*, Digital Tech Summit, Copenhagen, Denmark. |
| **May 27th, 2026** | *Driving AI 2026*, IDA Conference, Copenhagen, Denmark. |
| **Jan. 2021** | *Semaine de la Science*, Lycée Feuillade Lunel, Montpellier, France<br>`https://slides.com/ahcene/semaine-de-la-science` |
| **Dec. 2019** | *User Behavior with Markov Chains*, PyData MeetUp, Hamburg, Germany.<br>`https://slides.com/ahcene/pydata`<br>`https://twitter.com/WunderMobility/status/1070989382952382466` |
| **2009** | *"Club de Math"*, Albert Camus elementary school, Bondy, France. |

## Languages

| | | | |
|---|---|---|---|
| **English** | **German** | **Norwegian** | **French** |
| Fluent (TOEIC 990) | Good (B2-C1) | Basics (∼A2) | Mother tongue |

## Supervision

### PhD Candidates:

**Durgesh Singh** PhD Candidate at UiT The Arctic University of Norway.
*Learning from limited labels and its applications in medical imaging.*
Main Supervisor: Michael Kampffmeyer, UiT The Arctic University of Norway.
2020-2025

**Srishti Gautam** PhD Candidate at UiT The Arctic University of Norway.
*Towards Interpretable, Trustworthy and Reliable AI*
Main Supervisor: Michael Kampffmeyer, UiT The Arctic University of Norway.
Co-supervisor: Marina Höhne, ATB Potsdam.
2020-2024

### Bachelor/Master Students:

**Sijia Li** Master Thesis at University of Copenhagen, Denmark.
*An explanation framework for time series explanations.*
2026

**Johanna Ottosson & Laura Hansen** Bachelor Thesis at University of Copenhagen, Denmark.
*Item response theory analysis of image classifiers.*
2026

**Irem Ozseker** Master Thesis at TU Berlin, Germany.
*Design of Benchmark Data to Validate Explainable AI Using Diffusion Models.*
2025

**Hjalmar Schulz** Master Thesis at TU Berlin, Germany.
*On the detection of the suppressor effect by XAI methods.*
2024-2025

**Xhon Taraj** Bachelor Thesis at TU Berlin, Germany.
*Evaluating feature activation explanations on medical images.*
2024-2025

**Wangwang Tan** Master Thesis at TU Berlin, Germany.
*Centroid-based deep clustering models for continuous learning.*
2024

**Luca M. Cornils** Master Thesis at TU Berlin, Germany.
*Design of Benchmark Data to validate explainable Artificial Intelligence.*
Co-supervisor: Rick Wilming, TU Berlin, Germany
2023-2024

**Tor Kjøtrod** Master Thesis at UiT The Arctic University of Norway, Norway.
*Unsupervised segmentation of submarine recordings.*
Co-supervisor: Heidi Ahonen, Norwegian Polar Institute, Norway.
2022-2023

| | |
|---|---|
| **Alessandro Buttignon** | Master Thesis at Leuphana University, Germany.<br>*Multivariate anomaly detection using hierarchical temporal memory (HTM).*<br>Summer 2019. |
| **Shailee Jain** | DAAD bachelor exchange student from NIT Surathkal, India.<br>*Mining User Trajectories in Electronic Text Books.*<br>Summer 2017<br>Now PostDoc at the Chang lab in the Department of Neurosurgery, UC San Francisco. |
| **Louis Filstroff** | Bachelor exchange student from Centrale Lille, France.<br>Summer 2015<br>Now maître de conférences (Assistant Professor) at Centrale Lille, France. |

## Teaching

| | |
|---|---|
| **Winter 2024** | *Physics-Informed Machine Learning* , Master, TU Berlin, Germany.<br>Physics-Informed Neural Networks (PINNs) and Physics-Informed Neural Operators (PINOs), along with real-world applications. |
| **2023-2024** | *Uncertainty in Machine Learning*, Master, TU Berlin, Germany.<br>Uncertainty in different paradigms of machine learning such as calibration, conformal prediction, Bayesian neural networks, diffusion models, etc. |
| **Summer 2022** | *Pattern Recognition*, Master, UiT The Arctic University of Norway, Norway.<br>Bayes classifiers, SVM, kernels, neural networks, clustering, k-means, etc. |
| **2020-2021** | *Deep Learning*, Master/PhD, UiT The Arctic University of Norway, Norway.<br>Auto-encoders and VAEs, CNNs and RNNs, GANs, Deep Clustering, Generative Models, etc. |
| **2017-2018** | *Mathematical Foundation*, Data Science Master, Leuphana University, Germany.<br>Probability theory, statistics, linear algebra and functional analysis. |
| **Winter 2018** | *Machine Learning Lab*, Data Science Master, Leuphana University, Germany.<br>Machine Learning projects. |
| **Summer 2018** | *Forecasting and Prediction*, Data Science Master, Leuphana University, Germany.<br>Theory and techniques for data with time dependencies (Markov chains, CRF, Gaussian processes, etc.). |
| **Summer 2018** | *Scientific Computing with Python*, Master, Leuphana University, Germany.<br>Basic introduction to programming in Python (variables, loops, conditions, functions, etc.) and some classical libraries (numpy, scipy, matplotlib). |
| **Winter 2017** | *Introduction to Artificial Intelligence*, Bachelor, Leuphana University, Germany.<br>Overview of central themes in AI, particularly search, planning and learning, ethics. |
| **Winter 2013** | *R : Introduction to Psychometrics*, Bachelor, TU Munich, Germany.<br>Basic introduction to programming in R (variables, loops, conditions, functions, data frames, packages, etc.). Examples are taken from psychometric problems, in particular from Item Response Theory. |
| **2012-2013** | *UE33 Algèbre Linéaire*, Licence, Université Paris Dauphine, France.<br>Classic linear algebra course, from vectors to eigenvector decomposition, for economics students. |

**2011-2012** *Tutor for $1^{st}$ year Bachelor students*, UPMC, Paris, France.

**2011** *"Winter School Success Program"*, Lycée Turgot, Paris, France.
Review of high school program for A-Level in Mathematics.

**2009** *"Club de Math"*, Albert Camus elementary school, Bondy, France.
French, ∼10 pupils, one quarter.
Support hours in mathematics for good pupils from this disadvantaged area.

## Talks and Poster Presentations

**04.11.2026** *The AI Act in Five Steps* (Talk), *AI Denmark 2026*, Digital Tech Summit , Copenhagen, Denmark.

**27.05.2026** *Under the Hood of Black-Box Models: Deciphering Neural Networks with NAVE* (Talk), Driving AI 2026, IDA Conference, Copenhagen, Denmark.

**18.02.2026** *Inspecting Visual Models* (Talk), CogSys Seminar, Technical University of Denmark, Denmark.

**17.11.2025** *Inspecting Visual Models* (Talk), DIKU Seminar, University of Copenhagen, Denmark.

**07.03.2025** *On the Evaluation of Hallucinations* (Talk), KI-Met Sondersitzung, PTB, Germany.

**20.11.2024** *Explaining Explanations with Feature Activations* (Talk), UCPH Statistics Seminar, University of Copenhagen, Denmark.

**14.08.2024** *Representation Learning and XAI* (Talk), Seminar at the Division of Systems and Control, Uppsala University, Sweden.

**20.06.2024** *Representation Learning and XAI* (Talk), Seminar at the Data and AI Cluster, TU Eindhoven, The Netherlands.

**25.02.2024** *Pantypes: Diverse Representatives for Self-Explainable Models* (Poster), AAAI Conference on Artificial Intelligence, Vancouver, Canada.

**07.06.2023** *SuperCM: Revisiting Clustering for Semi-Supervised Learning* (Poster), IEEE International Conference on Acoustics, Speech and Signal Processing, Rhodos, Greece.

**01.12.2022** *ProtoVAE: A Trustworthy Self-Explainable Prototypical Variational Model* (Poster), Advances in Neural Information Processing Systems, New Orleans, USA.

**19.10.2021** *Joint Optimization of an Autoencoder for Clustering and Embedding* (Poster), Visual Intelligence Days 2021, Oslo, Norway.

**13.09.2021** *Joint Optimization of an Autoencoder for Clustering and Embedding* (Talk), ECML-PKDD, Online.

**10.01.2019** *Toward Deep Clustering* (Talk), Northern Lights Deep Learning Workshop 2019, Tromsø, Norway.

**16.07.2018** *Mining User Trajectories in Electronic Text Books* (Talk), International Conference on Educational Data Mining, Buffalo, USA.

**06.08.2017** *Frame-based Data Factorizations* (Talk and Poster), International Conference on Machine Learning, Sydney, Australia

**22.09.2017** *Infinite Mixtures of Markov Chains* (Talk), NFMCP 2017, The 6th International Workshop on New Frontiers in Mining Complex Patterns, Skopje, North Macedonia.

**27.09.2017** *Propagating Maximum Capacities for Recommendation* (Talk), KI 2017: 40th German Conference on Artificial Intelligence, Dortmund, Germany.

**26.06.2015** *Toward Data-Driven Analyses of Electronic Text Books* (Poster), International Conference on Educational Data Mining, Madrid, Spain.

**26.06.2015** *Generalising IRT to Discriminate Between Examinees* (Poster), International Conference on Educational Data Mining, Madrid, Spain.

**02.07.2014** *Analysing user behaviour with log data* (Poster), PhDIPF-Academy 2014, Bad Salzschlirf, Germany.

**09.10.2014** *Mining Implications From Data* (Talk), LWA/KDML 2014 : Workshop on Knowledge Discovery, Data Mining and Machine Learning, Aachen, Germany.

**12.11.2013** *Knowledge Space Analysis* (Talk), LS-Oberseminars "Advanced Seminar Quantitative Behavioral Sciences", TU Munich, Germany.

# Publications

†: The first author is a Ph.D. student I supervised. ∗: Simple or double first-co-authorship.

## International journals

1. * Explaining deep learning for ECG using time-localized clusters. A. Boubekki, K. Patlatzoglou, J. Barker, F. Siong Ng, A. H. Ribeiro. **IEEE Transactions on Biomedical Engineering** (2026).
2. Explainable AI needs formalization. S. Haufe, R. Wilming, B. Clark, R. Zhumagambetov, A. Boubekki, J. Martin, D. Panknin. **npj Artificial Intelligence** 2, 42 (2026). [2 cit.]
3. † SuperCM: Improving Semi-Supervised Learning and Domain Adaptation through differentiable clustering. D. Singh, A. Boubekki, R. Jenssen, M. Kampffmeyer. **Pattern Recognition** (2025)
4. *† Prototypical Self-Explainable Models Without Re-training. S. Gautam, A. Boubekki, M.M. Höhne, M. Kampffmeyer. **Transactions on Machine Learning Research** (2024). [8 cit.]
5. RELAX: Representation Learning Explainability. K.K. Wickstrøm, D.J. Trosten, S. Løkse, A. Boubekki, K.Ø. Mikalsen, M. Kampffmeyer, R. Jenssen. **International Journal of Computer Vision**, 1-27 (2023). [32 cit.]
6. A Contextually Supported Abnormality Detector for Maritime Trajectories. K.V. Olesen, A. Boubekki, M. Kampffmeyer, R. Jenssen, A.N. Christensen, S. Hørlück, L.H. Clemmensen. *Journal of Marine Science and Engineering* (2023). [11 cit.]
7. Selective Imputation for Multivariate Time Series Datasets with Missing Values. A. Blázquez-García, K.K. Wickstrøm, S. Yu, K.Ø. Mikalsen, A. Boubekki, A. Conde, U. Mori, R. Jenssen, J. A. Lozano. *IEEE Transactions on Knowledge and Data Engineering* (2023). [26 cit.]
8. * Clinically relevant features for predicting the severity of surgical site infections. A. Boubekki, J. Nordhaug Myhre, L.T. Luppino, K.Ø. Mikalsen, A. Revhaug, R. Jenssen. *IEEE Journal of Biomedical and Health Informatics* (2021). [5 cit.]
9. * Joint optimization of an autoencoder for clustering and embedding. A. Boubekki, M. Kampffmeyer, U. Brefeld, R. Jenssen. *Machine Learning* (2021). [38 cit.]
10. Predicting the difficulty of exercise items for dynamic difficulty adaptation in adaptive language tutoring. I. Pandarova, T. Schmidt, J. Hartig, A. Boubekki, R. D. Jones, U. Brefeld. *International Journal of Artificial Intelligence in Education*, 29(3) (2019). [83 cit.]
11. An application of multiple behavior SIA for analyzing data from student exams. T. Delacroix, A. Boubekki. *Educação Matemática Pesquisa*, v.16, n.3, pp.773-794 (2014). [8 cit.]

## Reviewed international conferences

12. * A five-step decomposition of how practitioners reason about the EU AI Act. A.Boubekki, O. Kokoulina, S. Das, L. H. Clemmensen. *Innovative Applications of Artificial Intelligence (IAAI-27)* (2027). [1 cit.]

13. * Multi-Depth Concept Extraction for Post-Hoc Vision Encoder Explanation. A. Boubekki, S. Fadel, S. Mair. **Proceedings of the European Conference on Machine Learning** (2026). [1 cit.]

14. Pantypes: Diverse Representatives for Self-Explainable Models. R. Kjærsgaard, A. Boubekki, L.H. Clemmensen. **Proceedings of the AAAI Conference on Artificial Intelligence** (2024). [5 cit.]

15. † SuperCM: Revisiting Clustering for Semi-Supervised Learning. D. Singh, A. Boubekki, R. Jenssen, M. Kampffmeyer. *IEEE ICASSP* (2023). [2 cit.]

16. † ProtoVAE: A Trustworthy Self-Explainable Prototypical Variational Model. S. Gautam, A. Boubekki, S. Hansen, S. A. Salahuddin, R. Jenssen, M. Höhne, M. Kampffmeyer. **Advances in Neural Information Processing Systems** (2022). [72 cit.]

17. * Infinite Mixtures of Markov Chains. J. Reubold, A. Boubekki, T. Strufe, U. Brefeld. *New Frontiers in Mining Complex Patterns*, LNAI 10785, Springer (2018). [4 cit.]

18. * Mining User Trajectories in Electronic Text Books. A. Boubekki, S. Jain, U. Brefeld. *Proceedings of Educational Data Mining* (2018). [11 cit.]

19. Frame-based Data Factorizations. S. Mair, A. Boubekki, U. Brefeld. **Proceedings of the International Conference on Machine Learning** (2017). [25 cit.]

20. Constrained Independence for Detecting Interesting Patterns. T. Delacroix, A. Boubekki, P. Lenca, S. Lallich. *International Conference on Data Science and Advanced Analytics (DSAA)* (2015).

21. * Toward Data-Driven Analyses of Electronic Text Books. A. Boubekki, U. Kröhne, F. Goldhammer, W. Schreiber, U. Brefeld. *Proceedings of the International Conference on Educational Data Mining* (2015).

22. * Generalising IRT to Discriminate Between Examinees. A. Boubekki, U. Brefeld, T. Delacroix. *Proceedings of the International Conference on Educational Data Mining* (2015).

## Reviewed international workshops

23. * Post-hoc Self-explanation of CNNs. A. Boubekki, L. Clemmensen. *ICLR 2026 Workshop on Unifying Concept Representation Learning* (2026).

24. Explainable AI needs formal notions of explanation correctness. S. Haufe, R. Wilming, B. Clark, R. Zhumagambetov, D. Panknin, A. Boubekki. *NeurIPS Workshop: Interpretable AI: Past, Present and Future* (2024). [14 cit.]

25. † WiseLVAM: A Novel Framework For Left Ventricle Automatic Measurements. D. Singh, A. Boubekki, Q. Cao, S. A. Aase, R. Jenssen, M. Kampffmeyer. *6th International Workshop of Advances in Simplifying Medical UltraSound (ASMUS), MICCAI* (2025). [1 cit.]

26. Bayesian User Behavior Models. J. Reubold, A. Boubekki, T. Strufe, U. Brefeld. *ECML/PKDD Workshop on New Frontiers in Mining Complex Patterns* (2017). [1 cit.]

## Books and book chapters

27. * Data-Driven Analyses of Electronic Text Books. A. Boubekki, U. Kröhne, F. Goldhammer, W. Schreiber, U. Brefeld. In *Solving Large Scale Learning Tasks. Challenges and Algorithms – Essays Dedicated to Katharina Morik on the Occasion of Her 60th Birthday*. S. Michaelis, N. Piatkowski, M. Stolpe (Eds.). Lecture Notes in Artificial Intelligence 9580, Springer, 362-376 (2016). [6 cit.]

28. Erklärung der Kompetenzentwicklung im Fach Geschichte mithilfe von Indikatoren zur Quantität und Qualität der Nutzung eines elektronischen Schulbuchs (QQM). W. Schreiber, U. Trautwein, U. Brefeld, C. Bertram, A. Boubekki, W. Wagner, M. Werner. Katholische Universität Eichstätt-Ingolstadt (2017).

### Reviewed national conferences

29. * Propagating Maximum Capacities for Recommendation. A. Boubekki, C. L. Lucchesi, U. Brefeld, W. Stille. *Proceedings of the German Conference on Artificial Intelligence (KI)* (2017). [1 cit.]

### Reviewed national workshops

30. Metrology for artificial intelligence in medicine. H. Rabus et al. *Proceedings of the XXIV IMEKO World Congress* (2025). [2 cit.]
31. EXACT: Towards a Platform for Empirically Benchmarking Machine Learning Model Explanation Methods. B. Clark et al. *Proceedings of IMEKO 2024*, ArXiv:2405.12261 (2024). [3 cit.]
32. Frame-based Matrix Factorizations. S. Mair, A. Boubekki, U. Brefeld. *LWA Workshop on Knowledge Discovery, Data Mining and Machine Learning* (2017).
33. * Mining Implications From Data. A. Boubekki, D. Bengs. *LWDA Workshop on Knowledge Discovery, Data Mining and Machine Learning* (2014).

### Research reports and publications under review

34. Local Label-Informed Feature Transfer for Generating Ground-Truth Medical Images: A Comparison of GAN- and Diffusion-Based Approaches. R. Wilming, I. Ozseker, L. M. Cornils, A. Boubekki, B. Clark, D. Panknin, S. Haufe. (under review)
35. * Leveraging Activations for Superpixel Explanations. A. Boubekki, S. Fadel, S. Mair. ArXiv:2406.04933 (2024). [2 cit.]

## References

- **Prof. Michael C. Kampffmeyer**, Director, ELLIS Unit Norway, Professor of Machine Learning, UiT The Arctic University of Norway, Senior Researcher II, Norwegian Computing Center.
  *Co-author of several key papers; we co-supervised two PhD candidates (D. Singh, S. Gautam).*
  `michael.c.kampffmeyer@uit.no`
- **Prof. Dr. Ulf Brefeld**, Professor of Machine Learning, Leuphana University Lüneburg
  *PhD supervisor (2016–2020).*
  `ulf.brefeld@leuphana.de`