# Kevin Baum, M.Sc., M.A.

Martin-Luther-Str. 28, 66111 Saarbrücken, Saarland, Germany 28.07.1986, Schwetzingen

**→** +49 173 7888 380

☑ academia@kevinbaum.de

ttps://kevinbaum.de

in LinkedIn

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### (Academic) Employment History (since the end of my Master's studies)

o9/2024 – today

Lead of the Research Group on Responsible AI and Machine Ethics (RAIME)

at the Research Department for Neuro-Mechanistic Modeling (NMM)

German Research Center for Artificial Intelligence (DFKI), Saarbrücken, Saarland.

12/2023 – today

Head of the Center for European Research in Trusted AI (CERTAIN).

German Research Center for Artificial Intelligence (DFKI), Saarbrücken, Saarland.

O1/2023 – today

Deputy Head and Lab Manager of the Research Department for NeuroMechanistic Modeling (NMM).

German Research Center for Artificial Intelligence (DFKI), Saarbrücken, Saarland.

o2/2015 – 12/2022 Research Associate and Lecturer.

Group for Dependable Systems and Software (Prof. Hermanns), since 2018 in project Explainable Intelligent Systems, funded by VolkswagenStiftung Saarland University (UdS), Saarbrücken, Saarland.

Research Associate and Lecturer.

Chair for Practical Philosophy (Prof. Wessels, Prof. Fehige), since 2018 in project Explainable Intelligent Systems, funded by VolkswagenStiftung Saarland University (UdS), Saarbrücken, Saarland.

### **Education**

Doctor of Philosophy at TU Dortmund

Thesis title: Doing Wrong with Others – Multi-Agent Consequentialism as a Solution for the Collective Action Problem. Defended, publication pending.

2014 M.A. Philosophy at Saarland University

Thesis title: Vom Bezug singulärer Terme in Aussagen über propositionale Einstellungen.

2013 M.Sc. Computer Science at Saarland University

Thesis title: GPGPU-gestützte diffusionsbasierte naive Videokompression.

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2011 B.Sc. Computer Science, (Minor: Mathematics) at Saarland University 2.0 Thesis title: Stützstellenauswahl für diffusionsbasierte Bildkompression unter Berücksichtigung einer Quadrixel-Substruktur-Restriktion.

2006 Abitur at Gymnasium Süderelbe, Hamburg

# Awards and Achievements

2020 Hochschulperle of the Year for lecture »Ethics for Nerds«, German Stifterverband.

Hochschulperle of the Month (January) for lecture »Ethics for Nerds«, German Stifterverband.

2011, 2012 **Deutschlandstipendium** 

# Memberships and Roles in Research Projects

#### **In Currently Running Projects**

- Member of the *Foundations of Perspicuous Software Systems* (CPEC), DFG Transregional Collaborative Research Centre 248
- 08/2024 Co-author and project lead of Multi-Level Abstractions and Causal Modeling for Enhanced Reinforcement Learning (MAC-MERLin), BMBF frame contract funds of DFKI
- Project lead of *Towards a Center for European Research in Trusted AI* (ToCERTAIN), European Regional Development Fund (ERDF)
- o1/2018 Associated researcher in *Explainable Intelligent Systems* (EIS), Artificial Intelligence and the Society of the Future track of the Volkswagen Foundation

#### In Submitted or Currently Prepared Projects (Selection)

- So-called *nextGENERATION researcher* (actively recruited scientists at the level of independent group leaders or TT professors; this role comes with a funding scheme that allows one to develop one's independent research program with up to three years of approximately €65K per year (e.g., to cover a PhD position and associated costs)) in the UdS proposal for *Next-Generation Al-Empowered Drug Discovery and Development* (NextAID<sup>3</sup>), DFG Cluster of Excellence, submitted August 2024
  - Principal Investigator in the currently developed proposal for Intent-Driven Interaction, DFG Collaborative Research Centre, planned submission in spring 2025

### **Teaching**

Summer 2024	»Practical AI Ethics« with Sarah Sterz. KI Campus.
5411111CT 2024	(online course, in preparation)
	»Machine Ethics. A Tutorial for Prospective Researchers« with Marija Slavkovik and Louise Dennis. 33rd International Joint Conference on Artificial Intelligence (IJCAI 2024), Jeju Island, South Korea.
Summer 2023	»AI for the Social Good« (Seminar) with Dr. Gerrit Großmann, Lisa Dargasz, Sarah Sterz, Prof. Verena Wolf. Saarland Informatics Campus, UdS. 7 ECTS
	»Ethics for Nerds« (Lecture) with Sarah Sterz, Prof. Holger Hermanns. Saarland Informatics Campus, UdS. 6 ECTS
Summer 2022	»Computer Ethics« (Lecture) with Sarah Sterz. LL.M. Informationstechnologie und Recht, UdS. 3 ECTS
	<b>Example 2.1 Example 2.2 Example 3.2 Example 3.2 Example 4.2 <b>Example 4.3 Example 4.2 Example 4.2 Example 4.2 Example 4.2 Example 4.2 Example 4.2 <b>Example 4.3 Example 4.2 Example 4.4 Example 4.2 <b>Example 4.4 Example 4.4 E</b></b></b></b>
Winter 2021/2022	»Ethische Fragen des Technologieeinsatzes« (Seminar). Bucerius Law School, Hamburg. 2 ECTS
Summer 2021	»Computer Ethics for IT & Law« (Lecture) with Sarah Sterz. LL.M. Informationstechnologie und Recht, UdS.  3 ECTS
	<b>»Ethics for Nerds« (Lecture)</b> with Sarah Sterz, Prof. Holger Hermanns. Saarland Informatics Campus, UdS. 6 ECTS
Winter 2020/2021	»Ethische Fragen des Technologieeinsatzes« (Seminar). Bucerius Law School, Hamburg. 2 ECTS

# **Teaching (continued)**

Summer 2020	»Ethics for Nerds« (Lecture) with Sarah Sterz, Prof. Holger Hermanns, Saarland Informatics Campus, UdS. 6 ECTS
Summer 2019	<ul> <li>*Ethics for Nerds« (Lecture) with Sarah Sterz, Prof. Holger Hermanns, Saarland Informatics Campus, UdS.</li> </ul>
Winter 2018/2019	»Computer sagt: "wahrscheinlich". Wie KI und Algorithmen unsere Welt verändern« (Seminar). College of Fine Arts (Universität der Künste), Berlin.  2 ECTS
	»Weapons of Math Destruction – Wie Big Data Ungerechtigkeit f\u00f6rdert und Demokratie gef\u00e4hrdet« (Seminar). Philosophy Department, UdS. 6 ECTS
Summer 2018	<b>Ethics for Nerds« (Lecture)</b> with Prof. Holger Hermanns. Saarland Informatics Campus, UdS. 6 ECTS
	»Derek Parfits Praktische Philosophie in Reasons & Persons« (Seminar). Philosophy Department, UdS. 6 ECTS
Winter 2017/2018	<b>»Das Problem gemeinschaftlichen Handels« (Seminar).</b> Philosophy Department, UdS. 6 ECTS
Summer 2017	»Moral und Algorithmen« (Seminar). Philosophy Department, UdS. 6 ECTS
	»Ethics for Nerds« (Lecture) with Prof. Holger Hermanns. Saarland Informatics Campus, UdS. 6 ECTS
Winter 2017/2018	»Von der Entscheidungstheorie zum Konsequentialismus« (Seminar). Philosophy Department, UdS. 6 ECTS
Summer 2016	»Extending Morals: Moralisch handelnde Roboter, Roboter moralisch behandeln« (Seminar). Philosophy Department, UdS. 6 ECTS
	<b>Ethics for Nerds« (Lecture)</b> with Prof. Holger Hermanns. Saarland Informatics Campus, UdS.  6 ECTS
Winter 2015/2016	»Was kommt jetzt? Die Zukunft der Menschheit, Transhumanismus und die technologische Singularität« (Seminar). Philosophy Department, UdS. 6 ECTS
Summer 2015	»Es macht doch keinen Unterschied! Oder: Was wäre, wenn jeder das täte?« (Seminar). Philosophy Department, UdS. 6 ECTS
	<b>Ethik für Nerds« (Proseminar)</b> with Prof. Holger Hermanns. Saarland Informatics Campus, UdS.  5 ECTS
Summer 2013	» <b>Prädikatenlogik erster Stufe« (Seminar).</b> Philosophy Department, UdS. <i>6 ECTS</i>

# Supervision and Review of Student Theses, Student Advising

## Independently Supervised and Reviewed Bachelor's and Master's Theses

- Building a Reason-Sensitive Reinforcement Learning Agent. Master's Thesis of Lisa Dargasz (M.Sc.).
- Outputs as Evidence: Exploring the Explanatory Role of XAI Methods through Thomas Bartelborth's Theory on Nomic Patterns. Bachelor's Thesis of Lena Marie Budde (B.A.).

# Supervision and Review of Student Theses, Student Advising (continued)

Another Take on Newcomb's Problem. Bachelor's Thesis of Tim Dirk Metzler (B.A.).

#### Co-Supervised Bachelor's and Master's Theses, Advisory Service

- Building Bridges for Better Machines: From Machine Ethics to Machine Explainability and Back. Doctoral Thesis of Timo Speith (**Dr. Phil**).
  - Gibt es Umstände, unter denen Abtreibung moralisch erlaubt ist? State examination thesis of Alisha Monika Mateas (StEx).
  - A Framework of Verifiable Machine Ethics and Machine Explainability. Master's Thesis of Timo Speith (M.Sc.).
- Schuld der Massen Kollektive Verantwortung und das Überdeterminiertheitsproblem. Master's Thesis of Yannik Bast (M.A.).
  - Klimawandel und Spieltheorie: Ist kooperatives Verhalten der Staaten in der Klimapolitik rational? Bachelor's Thesis of Tessy Aulner (B.A.).
    - Warum ich einen Unterschied mache. Zur Ethik individuellen Handelns im gemeinschaftlichen Handeln. Bachelor's Thesis of Sarah Maurer (M.A.).

#### **Co-Supervised Research Immersion Labs**

- Lena Marie Budde: [A research immersion lab on mechanistic interpretability and explainable AI, upcoming].
- Janine Lohse: <u>Predicting and Manipulating Game Rules through Weight Analysis in Neural Networks?</u>

### **Research Publications**

#### **Journal Articles**

- S. Biewer, K. Baum, S. Sterz, et al., "Software Doping Analysis for Human Oversight," Formal Methods in System Design, 2024. ODI: 10.1007/s10703-024-00445-2.
- K. Baum, J. Bryson, F. Dignum, et al., "From Fear to Action: AI Governance and Opportunities for All," Frontiers in Computer Science, vol. 5, 2023. ODOI: 10.3389/fcomp.2023.1210421.
- K. Baum and S. Sterz, "Ethics for Nerds," *The International Review of Information Ethics*, vol. 31, no. 1, 2022, special issue on »Ethics in the Age of Smart Systems«. ODOI: 10.29173/irie484.
- K. Baum, S. Mantel, E. Schmidt, and T. Speith, "From Responsibility to Reason-Giving Explainable Artificial Intelligence," *Philosophy & Technology*, vol. 35, no. 1, 2022. ODOI: 10.1007/s13347-022-00510-w.
- N. Schlicker, M. Langer, S. K. Ötting, K. Baum, C. J. König, and D. Wallach, "What to Expect from Opening Up 'Black Boxes'? Comparing Perceptions of Justice Between Human and Automated Agents," Computers in Human Behavior, vol. 122, 2021. DOI: 10.1016/j.chb.2021.106837.
- M. Langer, D. Oster, T. Speith, *et al.*, "What Do We Want from Explainable Artificial Intelligence (XAI)? A Stakeholder Perspective on XAI and a Conceptual Model Guiding Interdisciplinary XAI Research," *Artificial Intelligence*, vol. 296, 2021. ODI: 10.1016/j.artint.2021.103473.

M. Langer, K. Baum, C. J. König, V. Hähne, D. Oster, and T. Speith, "Spare Me the Details: How the Type of Information About Automated Interviews Influences Applicant Reactions," *International Journal of Selection and Assessment*, vol. 29, no. 2, pp. 154–169, 2021. ODI: 10.1111/ijsa.12325.

### **Conference Proceedings**

- K. Baum, L. Dargasz, F. Jahn, T. P. Gros, and V. Wolf, "Acting for the Right Reasons: Creating Reason-Sensitive Artificial Moral Agents," accepted for the *Formal Ethical Agents and Robots* workshop at the *19th International Conference on Integrated Formal Methods* (iFM 2024), Manchester, UK, 11 13 Nov 2024, 2024. Odo: https://doi.org/10.48550/arXiv.2409.15014.
- D. Baum, K. Baum, S. Zamani, C. Bennoit, and D. Werth, "Transparent Transparency Developing a Scheme for Understanding Transparency Requirements," accepted for the on-site proceedings of the 2nd Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2024), Crete, Greece, 30.10 03.11.2024, 2024. URL: https://2024-isola.isola-conference.org/aisola-tracks/.
- K. Baum, S. Biewer, H. Hermanns, et al., "Taming the AI Monster: Monitoring of Individual Fairness for Effective Human Oversight," invited paper for the proceeding of the 30th International Symposium on Model Checking Software (SPIN 2024) colocated with the 27th European Joint Conferences on Theory and Practice of Software (ETAPS 2024), thoroughly revised version (with changed focus) of Biewer et al. 2024, 2024. © URL: https://spin-web.github.io/SPIN2024/assets/preproceedings/SPIN2024-paper1.pdf.
- S. Sterz, K. Baum, S. Biewer, *et al.*, "On the Quest for Effectiveness in Human Oversight: Interdisciplinary Perspectives," FAccT '24: Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency, Jun. 2024. ODI: 10.1145/3630106.3659051.
- D. Baum, K. Baum, T. P. Gros, and V. Wolf, "XAI Requirements in Smart Production Processes: A Case Study," in *Explainable Artificial Intelligence. Proceedings of the World Conference on eXplainable Artificial Intelligence (xAI 2023)*, L. Longo, Ed., ser. Communications in Computer and Information Science (CCIS), vol. 1901, Cham: Springer Nature Switzerland, 2023, pp. 3–24. ODOI: 10.1007/978-3-031-44064-9\_1.
- M. Langer, K. Baum, K. Hartmann, S. Hessel, T. Speith, and J. Wahl, "Explainability Auditing for Intelligent Systems: A Rationale for Multi-Disciplinary Perspectives," in 29th IEEE International Requirements Engineering Conference Workshops (RE 2021 Workshops), Notre Dame, Indiana, USA, T. Yue and M. Mirakhorli, Eds., IEEE, 2021, pp. 164–168. ODI: 10.1109/REW53955.2021.00030.
- S. Sterz, K. Baum, A. Lauber-Rönsberg, and H. Hermanns, "Towards perspicuity requirements," in 29th IEEE International Requirements Engineering Conference Workshops (RE 2021 Workshops), Notre Dame, Indiana, USA, T. Yue and M. Mirakhorli, Eds., IEEE, Sep. 2021, pp. 159–163. ODI: 10.1109/REW53955.2021.00029.
- M. A. Köhl, K. Baum, M. Langer, D. Oster, T. Speith, and D. Bohlender, "Explainability as a Non-Functional Requirement," in 27th IEEE International Requirements Engineering Conference (RE 2019), Jeju Island, South Korea, IEEE, 2019, pp. 363–368. ODI: 10.1109/RE.2019.00046.
- 9 K. Baum, H. Hermanns, and T. Speith, "Towards a framework combining machine ethics and machine explainability," in *Proceedings of the 3rd Workshop on Formal Reasoning about Causation, Responsibility, and Explanations in Science and Technology (CREST 2018), Thessaloniki, Greece, 21st April 2018*, B. Finkbeiner and S. Kleinberg, Eds., 2019. ODI: 10.4204/EPTCS.286.4.
- K. Baum, N. Kirsch, K. Reese, P. Schmidt, L. Wachter, and V. Wolf, "Informatikunterricht in der Grundschule? Erprobung und Auswertung eines Unterrichtsmoduls mit Calliope mini," in

- Proceedings of the Informatik für alle, 18. GI-Fachtagung Informatik und Schule (INFOS 2019) in the GI-Edition: Lecture Notes in Informatics (LNI), A. Pasternak, Ed., vol. P-288, Gesellschaft für Informatik, 2019, pp. 49–58. ODI: 10.18420/INFOS2019-B1.
- A. Sesing and K. Baum, "Anforderungen an die Erklärbarkeit maschinengestützter Entscheidungen," in Die Macht der Daten und der Algorithmen Regulierung von IT, IoT und KI. Tagungsband DSRI-Herbstakademie 2019, J. Taeger, Ed., 2019, pp. 435–449. URL: http://olwir.de/?content=reihen/uebersicht&sort=tb&isbn=978-3-95599-061-9.
- K. Baum, H. Hermanns, and T. Speith, "From Machine Ethics To Machine Explainability and Back," in *International Symposium on Artificial Intelligence and Mathematics (ISAIM 2018)*, Fort Lauderdale, Florida, USA, 2018. URL: https://isaim2018.cs.ou.edu/papers/ISAIM2018\_Ethics\_Baum\_etal.pdf.
- K. Baum, M. Köhl, and E. Schmidt, "Two Challenges for CI Trustworthiness and How to Address Them," in *Proceedings of the 1st Workshop on Explainable Computational Intelligence (XCI 2017)*, M. Pereira-Fariña and C. Reed, Eds., Dundee, United Kingdom: Association for Computational Linguistics, Sep. 2017. PDOI: 10.18653/v1/W17-3701.
- K. Baum, "What the Hack Is Wrong with Software Doping?" In Proceedings of the 7th International Symposium on Leveraging Applications of Formal Methods: ISoLA 2016: Leveraging Applications of Formal Methods, Verification and Validation: Discussion, Dissemination, Applications, T. Margaria and B. Steffen, Eds., ser. Lecture Notes in Computer Science (LNCS), Springer International Publishing, vol. 9953, 2016, pp. 633–647. ODI: 10.1007/978-3-319-47169-3\_49.
- A. Krekhov, J. Grüninger, K. Baum, D. McCann, and J. Krüger, "MorphableUI: A Hypergraph-Based Approach to Distributed Multimodal Interaction for Rapid Prototyping and Changing Environments," in *Proceedings of the 24th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG 2016) in co-operation with EUROGRAPHICS*, ser. Computer Science Research Notes (CSRN), Václav Skala-UNION Agency, 2016, pp. 299–308.

  © URL: http://wscg.zcu.cz/WSCG2016/!!\_CSRN-2602.pdf.

#### Chapters

K. Baum, "Utilitarismus und das Problem kollektiven Handelns," in *Handbuch Utilitarismus*, V. Andrić and B. Gesang, Eds., *in print*, J.B. Metzler.

#### **Submitted and Under Review**

- N. Schlicker, K. Baum, A. Uhde, S. Sterz, M. C. Hirsch, and M. Langer, A Micro and Macro Perspective on Trustworthiness: Theoretical Underpinnings of the Trustworthiness Assessment Model (TrAM), conditional accept (minor revisions) at Computers in Human Behavior for the special issue on The Social Bridge: An Interdisciplinary View on Trust in Technology, 2023. ODI: 10.31234/osf.io/qhwvx.
- M. Langer, K. Baum, and N. Schlicker, Effective Human Oversight of AI-based Systems: A Signal Detection Perspective on the Detection of Inaccurate and Unfair Outputs, conditional accept (minor revisions) at Minds and Machines for the special issue on Interdisciplinary Perspectives on the (Un)fairness of Artificial Intelligence, 2023. ODOI: 10.31234/osf.io/ke256.

## Other Academic Activities (Selection)

#### Renowned Workshops and Seminars (by Invitation Only)

- 1 Digital Democracy of the Interdisciplinary Institute for Societal Computing (I<sup>2</sup>SC), Saarland University, Saarbrücken, October 9-10, 2024.
- Workshop on Artificial Intelligence at the UK-German Science, Innovation and Technology Dialogue, Imperial College White City Campus, London, UK, March 12, 2024.
- Dagstuhl Seminar 23371: Roadmap for Responsible Robotics, Leibniz Center for Informatics Schloss Dagstuhl, Sep 10 Sep 15, 2023.

  (The actual Roadmap for Responsible Roadmaps as a joint Dagstuhl publication under the direction of Prof. Michael Fisher is currently being finalized.)
- Dagstuhl Seminar 23151: Normative Reasoning for AI, Leibniz Center for Informatics Schloss Dagstuhl, Apr 10 Apr 14, 2023.
- Dagstuhl Seminar 16222: Engineering Moral Agents from Human Morality to Artificial Morality, Leibniz Center for Informatics Schloss Dagstuhl, May 29 Jun 03, 2016.

#### Academic Talks (Selection)

- 1 K. Baum, Current Ethical Challenges of AI, keynote at the 4th Inria-DFKI European Summer School on AI (IDESSAI 2024) at Saarland Informatics Campus, Saarbrücken, Germany, Sep. 2024. URL: https://idessai.eu/.
- X. Baum and L. Dargasz, A Reason-Responsiveness Approach to Machine Ethics for Reinforcement-Learning Agents, paper presentation at the international conference on Formal Ethics 2024 at the University of Greifswald, Greifswald, Germany, Jul. 2024. URL: https://www.wiko-greifswald.de/formal-ethics-2024/.
- S. Sterz, K. Baum, and P. Meinel, On the Quest for Effectiveness in Human Oversight: Interdisciplinary Perspectives, paper presentation at the 7th ACM Conference on Fairness, Accountability, and Transparency (FAccT 2024), Rio de Janeiro, Brazil, Jun. 2024. URL: https://facctconference.org/2024/.
- 4 K. Baum, Erklärbarkeit und Effective Human Oversight im Art. 14 des EU AI Acts, invited talk at the seminar KI und der aufgeklärte Nutzer of the Law and AI Research Group (LARG) at Bucerius Law School, Hamburg, Germany, Apr. 2024.
- 5 K. Baum, On the Quest for Effectiveness in Human Oversight, invited talk at the Institute for Ethics in Technology at Hamburg University of Technology (TUHH), Hamburg, Germany, Apr. 2024.
- K. Baum, Beyond Technicalities: Positive Normative Choices and the Ethical Dimensions of Responsible AI System Design, at the 1st Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2023), Crete, Greece, Oct. 2023. © URL: https://aisola.org/papers/baum.pdf.
- K. Baum, S. Biewer, H. Hermanns, et al., Effective Human Oversight: Conditions and Implications of the Proposed EU AI Act from an Interdisciplinary Perspective, at the 1st Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2023), Crete, Greece, Oct. 2023. Our.: https://aisola.org/papers/hermanns-lauber-roensberg-langer-baum-hetmank-sterz-meinel-biewer.pdf.

- N. Schlicker, K. Baum, A. Uhde, S. Sterz, M. C. Hirsch, and M. Langer, How Do We Assess System Trustworthiness? Introducing the Trustworthiness Assessment Model, at the 1st Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2023), Crete, Greece, Oct. 2023. Ourl: https://aisola.org/papers/schlicker-baum-uhde-sterz-hirsch-langer.pdf.
- 9 K. Baum, *Machine Ethics* ⇔ *Machine Explainability*, guest lecture and expert panel participation on invitation by Rune Nyrup in context of the seminar »Designing artificial moral agents could we, and should we?« within the program »AI Ethics and Society« at the *Centre for the Future of Intelligence* (CFLI), Cambridge, UK, Jan. 2022.
- K. Baum, M. Langer, and S. Sterz, *The Role of XAI for Meta-Trust and Trust Propagation Psychological and Philosophical Perspectives*, at the *2nd Workshop on Issues in XAI: Understanding and Explaining in Healthcare* at the *Centre for the Future of Intelligence* (CFLI), Cambridge, UK (postponed and moved online due to COVID-19), May 2021. URL: http://lcfi.ac.uk/news-and-events/events/issues-explainable-ai-2-understanding-and-explaini/.
- K. Baum and S. Sterz, Ethics for Nerds: Best Practices for Teaching Ethics to Computer Scientists, at the 10th Annual Symposium Ethics in the Age of Smart Systems (online), Apr. 2021. © URL: https://www.luc.edu/digitalethics/events/symposiaarchive/2021/.
- K. Baum, New Ground for Consequentialism: How to Solve the Coordination Problem, paper presentation at Thomas Schmidt's Colloquium in Practical Philosophy at the Humboldt University (HU), Berlin, Germany (online due to COVID-19), Jan. 2021.
- K. Baum, Verantwortung, Vertrauen, Rechte: Über die ethische Dimension erklärbarer KI, at the workshop Verantwortlichkeit digitalisierter Unternehmen die ethischen und rechtlichen Auswirkungen des Einsatzes künstlicher Intelligenz, Universität Salzburg, Salzburg, Austria, Nov. 2019. URL: https://www.plus.ac.at/wp-content/uploads/2021/02/Programmentwurf.pdf.
- K. Baum, Development or Regulation First, at the 1st Workshop on Issues in XAI: Blackboxes, Recommendations, and Levels of Explanations, Saarbrücken, Germany, Oct. 2019. © URL: https://explainable-intelligent.systems/workshop/.
- K. Baum, L. Kästner, and E. Schmidt, *Understanding Explainable AI: The EIS Project*, at the scientific colloquium of the »Science, Value, and the Future of Intelligence« project at the *Leverhulme Centre for the Future of Intelligence*, Cambridge, UK, Jul. 2019.
- K. Baum and F. Bräuer, *Trusting Artificial Experts*, at the workshop *Evidence in Law and Ethics, Jagiellonian University*, Kraków, Poland, Apr. 2019. URL: https://incet.uj.edu.pl/evidence-in-law-and-ethics.
- K. Baum and E. Schmidt, Moral Harmony vs. Supervenience: A New Dilemma for Consequentialism, at the 10th International Congress of the Society for Analytical Philosophy (GAP 10), Cologne, Germany, Sep. 2018. URL: https://gap10.de/wp-content/uploads/2018/09/Programmheft.GAP\_.10.Final\_.NEU\_-2.pdf.
- K. Baum, H. Hermanns, and T. Speith, *Towards a Framework Combining Machine Ethics and Machine Explainability*, 3rd Workshop on Formal Reasoning about Causation, Responsibility, and Explanations in Science and Technology (CREST2018) as part of the 28th European Joint Conferences on Theory and Practice of Software (ETAPS 2018), Thessaloniki, Greece, Apr. 2018.

  Our URL: https://www.react.uni-saarland.de/crest2018/.

- K. Baum, Obligation Overboard? Decision-Theoretic Objective Consequentialism to the Rescue, talk as part of a research stay at the Munich Center for Mathematical Philosophy (MCMP) at the invitation of Prof. Dr. Stephan Hartmann, Munich, Germany, Jul. 2017.
- K. Baum, What the Hack Is Wrong with Software Doping? at the 7th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISOLA 2016), Corfu, Greece, Oct. 2016.
- K. Baum and E. Schmidt, Kagans 'Lösung' des Problems gemeinschaftlichen Handelns: Wie eine verborgene Annahme Kagans Ansatz entwertet, poster presentation at the 9th International Congress of the Society for Analytical Philosophy (GAP 9), Osnabrück, Germany, Sep. 2015. URL: https://gap9.de/wp-content/uploads/2015/08/Programmheft-GAP.9-final.pdf.
- K. Baum, Asking the Right Questions, at the seminar Engineering Moral Agents from Human Morality to Artificial Morality on Schloss Dagstuhl, Leibniz-Zentrum für Informatik, Wadern, Germany, May 2015. OURL: https://drops.dagstuhl.de/entities/document/10.4230/DagRep.6.5.114.

#### **Upcoming, Invitation Accepted**

- 1 K. Baum, L. Dargasz, T. P. Gros, and F. Jahn, Why Did It Do That? Trustworthy Artificial Agents via Justifiability, talk accepted for the 2nd Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2024), Crete, Greece, 30.10 03.11.2024, 2024.
- K. Baum, M. Schlüter, E. Schmidt, and T. Speith, *The Reasons of AI Systems*, talk accepted for the 2nd Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2024), Crete, Greece, 30.10 03.11.2024, 2024.
- Explainability was Yesterday Justification is Now! Invited keynote in the event series »Explainable AI and Society« of the project Explainable Intelligent Systems (EIS) funded by the Volkswagenstiftung in Freiburg, Feb. 2025.

#### Publications and Presentations Aimed at Public Audience

#### **Publications (Selection)**

- 1 C. Müller, Y. Liu, Y. Wang, K. Baum, R. Bhawalkar, and H. Purwinsh, Responsible AI in the Automotive Industry: Techniques and Use Cases, Accenture and the German Research Center for Artificial Intelligence (DFKI), 2024.
- K. Baum and S. Sterz, "Ethics for Nerds: Verantwortung für die Informatiker:innen von Morgen," *Mitteilungen des Fachverbandes Philosophie*, vol. 63, pp. 72–83, 2023. © URL: https://www.fv-philosophie.de/wp-content/uploads/2024/02/Mitteilungen-2023-Hompage-mit-kommentiertem-Teilabdruck-der-Beitraege.pdf.
- K. Baum, "Sicherheitsrisiko KI," *IMPULSE Das Magazin der VolkswagenStiftung*, pp. 38–39, 2022. OURL: https://www.volkswagenstiftung.de/de/news/aktuelles/sicherheitsrisiko-ki.
- 4 K. Baum, "Moral für Maschinen?" *OPUS Kulturmagazin*, no. 85, 2021. OURL: https://opus-kulturmagazin.de/moral-fuer-maschinen/.
- M. Schillo and K. Baum, "»Have you ever questioned the nature of your reality?« Westworld aus der Perspektive der Philosophie," in *Folge um Folge. Multiple Perspektiven auf die Fernsehserie*, Universitätsverlag Hildesheim, 2020, ch. 13. ODOI: 10.18442/160.

- K. Baum, T. Feldkamp, S. Henning, and N. Käfer, "Algorithmen und die Grenzen von Fairness," in *Unternehmensverantwortung im digitalen Wandel*, Bertelsmann Stiftung and Wittenberg-Zentrum für Globale Ethik, Ed., Verlag Bertelsmann Stiftung, 2019, ch. 4. ODOI: 10.11586/2020063.
- M. Langer, K. Baum, and C. J. König, "Die (Un-)Nachvollziehbarkeit algorithmenbasierter Entscheidungen: Implikationen und Empfehlungen für die Zukunft," in *Mensch und Gesellschaft im digitalen Wandel*, Deutscher Psychologen Verlag, 2018, pp. 32–38, ISBN: 978-3-942761-47-5. Ø DOI: 10.22028/D291-31275.
- M. Langer, K. Baum, and C. J. König, "Algorithmen bei der Personalauswahl eine kritische und hoffnungsvolle Betrachtung," *Wirtschaftspsychologie aktuell*, 1st ser., vol. 25, pp. 36–42, 2018, ISSN: 1611-9207. ODI: 10.22028/D291-31272.

#### Talks and Panel Appearances (Selection)

- K. Baum, Digitalisierung und KI in der Medizin Chancen und Risiken für Arzt und Patient, keynote at the 16. Saarländischer Fachärztetag, Saarbrücken, Deutschland, Jun. 2024. URL: https://www.facharztforum-saar.de/.cm4all/uproc.php/0/Einladung%20web.pdf.
- K. Baum, Trusted AI: Von Grundlagenforschung zu echtem Impact, keynote at the visit of the Baden-Badener Unternehmer Gespräche e.V. in Saarbrücken, Deutschland, Jun. 2024.
- K. Baum, Trusted AI: Künstliche Intelligenz, der man vertrauen darf, research keynote at the Journalismuspreis Informatik 2023 of the Ministerium für Wirtschaft, Innovation, Digitales und Energie des Saarlandes at the Saarland Informatics Campus, Saarbrücken, Germany, May 2024.
- 4 K. Baum, Trusted AI as a Driving Force for Societally Beneficial Innovations, keynote at the 1st Industry Collaboration and Transfer Exchange From Research to Market, Saarbrücken, Germany, May 2024.
- K. Baum, Ethik und KI: Eine Balance zwischen Fortschritt und Verantwortung? talk and expert panel participation at the Afterwork-Event "Business-KI-Balance" @CFK/GymLodge event in context of the European Digital Innovation Hub Saarland (EDIH), Spiesen-Elversberg, Germany, Mar. 2024.
- K. Baum, AI Safety and Security in Practice, talk as part of the visit of the »Trade Mission to Saarland« of the Luxembourg Chamber of Commerce at the invitation of the Saarland Ministry of Economics, Innovation, Digital Affairs and Energy, Mar. 2024. URL: https://app.swapcard.com/event/mission-germany/exhibitors/RXZlbnRWaWV3XzY2Nzg3MQ==.
- 7 K. Baum, Künstliche Intelligenz im Betrieb: Ethische Fallstricke, talk at »Technologiekonferenz« of the Beratungsstelle für sozialverträgliche Technologiegestaltung e.V. (BEST) and the Arbeitskammer des Saarlandes, Dec. 2023. © URL: https://www.rechtsschutzsaal.de/aktuelles-termine/meldung-1/technologiekonferenz-best-ev-im-rechtsschutzsaal-bildstock.
- 8 K. Baum, *KI Fluch oder Segen*? Expert panel participation in the context of the »Der Fabulant« project of *modus*|*zad*, Dec. 2023. URL: https://modus-zad.de/publikation/blog/online-veranstaltung-ki-fluch-oder-segen/.
- 9 K. Baum, KI und deren Bedeutung für Wissenschaft und Hochschulen, expert panel participation in the context of the »Studium Generale« at Bucerius Law School, Jun. 2023. © URL: https://www.law-school.de/news-artikel/expertengespraech-zu-ki-und-die-bedeutung-fuer-wissenschaft-und-hochschulen.
- K. Baum, Künstliche Intelligenz und Verantwortung, keynote at the Paul Fritsche Stiftung Wissenschaftliches Form, Homburg, Germany, Dec. 2022. @ URL: https://www.uniklinikumsaarland.de/de/lehre/dekanat/wissenschaftliche\_foren\_gastvortraege.

- K. Baum, AI. Friend, Foe or Fad? Expert panel participation in the context of the Booster Conference 2024 in Bergen, Norway, Apr. 2022. URL: https://2022.boosterconf.no/talk/panel-ai-friend-foe-or-fad/.
- K. Baum, Algorithmen, Fake News & Fragmentierung, talk at »Safer Internet Day 2021«, Feb. 2021.

  OURL: https://www.onlinerlandsaar.de/wp-content/uploads/2021/01/safer\_internet\_day\_2021\_X4.pdf.
- K. Baum, Moralische Hürden von Profiling und die Herausforderung der Erklärbarkeit, talk at the event »Profiling 2.0« organized by the Thuringian State Commissioner for Data Protection and Freedom of Information (TLfDI), Oct. 2020. URL: https://www.onlinerlandsaar.de/wp-content/uploads/2021/01/safer\_internet\_day\_2021\_X4.pdf.
- K. Baum, Fünf ethische Herausforderungen im Zeitalter der digitalisierten Medizin, keynote (»Festvortrag«) at the Eröffnung des Fortbildungsjahres 2020 / 2021 of the Ärztekammer des Saarlandes, Homburg, Germany, Sep. 2020. URL: https://www.aerztekammer-saarland.de/index/news/News-20200824-Eroeffnung-Fortbildungsjah/.
- K. Baum, Wenn Computer die Lebenszeit vorhersagen: Autonomie, Verantwortung und Erklärbarkeit, talk at the »Hospizgespräch« at St. Jakobus Hospiz., Jun. 2019. URL: https://www.kinderhospizdienst-saar.de/uploads/media/18-05-28\_Einladung\_JUNI\_01.pdf.
- K. Baum, Aber warum, Computer? Erklär' es mir! Von rassistischen, undurchschaubaren künstlichen Intelligenzen, die vielleicht morgen schon über Ihr Leben bestimmen und von der Hilflosigkeit von Menschen in Schleifen, talk at the »Futurologischer Kongress« of the Stadttheater Ingolstadt., Jun. 2018.

  OURL: https://theater.ingolstadt.de/fileadmin/doc/dokumentation\_futurologischer\_kongress/futurologischer\_kongress\_2018.pdf.

### (Co-)Organizer of Events (Selection)

- Algorithmische Entscheidung und menschliche Selbstbestimmung, expert panel participation at the first even of the series »I2SC Goes to Town« of the Interdisciplinary Institute for Societal Computing (I2SC), Jul. 2024. OURL: https://www.i2sc.net/events/i2sc-goes-to-town.
- Zukunft Bildung: KI im Klassenzimmer und Hörsaal, third joint event of the Landeszentrale für politische Bildung des Saarlandes (LpB), the non-profit association Algoright e.V., the German Research Center for Artificial Intelligence (DFKI) with, among others, the Saarland Minister of Education Christine Streichert-Clivot, Jun. 2024. Our.: https://eveeno.com/ki-im-klassenzimmer.
- Automatisierte Aufmerksamkeit: Wie KI Journalismus, Öffentlichkeit und Meinungsbildung prägt, second joint event of the Landeszentrale für politische Bildung des Saarlandes (LpB), the non-profit association Algoright e.V., the German Research Center for Artificial Intelligence (DFKI) and the Saarland State Media Authority (LMS)., Nov. 2023. OURL: https://eveeno.com/automatisierte\_aufmerksamkeit.
- Entmystifizierung eines Hypes: ChatGPT zum Anfassen, first joint event of the Landeszentrale für politische Bildung des Saarlandes (LpB), the non-profit association Algoright e.V., the German Research Center for Artificial Intelligence (DFKI) and the General Studies Committee (AStA) of Saarland University., May 2023. URL: https://eveeno.com/ChatGPT\_zum\_anfassen.

Synergien oder Konflikt? Forschung, Regulierung und Innovation im Spannungsverhältnis am Beispiel Künstlicher Intelligenz, expert panel, May 2023. OURL:

https://www.saarnews.com/podiumsdiskussion-in-saarbruecken-kuenstliche-intelligenz-an-der-schnittstelle-von-wissenschaft-politik-und-wirtschaft/.

#### **Upcoming, Invitation Accepted**

- Vertrauenswürdige KI: Was ist das und worauf kommt es an? Keynote in the event series »AI Insights Einblicke in die Vielfalt der Künstlichen Intelligenz« of the Bundesamt für Sicherheit in der Informationstechnik (BSI) and the Landesmedienanstalt Saarland (LMS), Oct. 2024.
- Vertrauenswürdige KI: Europas (letzte?) Chance auf eine KI-Vorreiterrolle, Keynote at the »Handelsblatt Summit Künstliche Intelligenz 2024«, Nov. 2024. Ø URL: https://live.handelsblatt.com/event/handelsblatt-summit-kuenstliche-intelligenz/referenten/.

### Scientific Services & Science Infrastructure

### (Co-)Organizing of Workshops, & Special Tracks, Tutorials

- Special Track Co-Organizer of »Responsible and Trusted AI: An Interdisciplinary Perspective« at the 2nd Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISOLA 2024), 30 October 3 November, 2024, Crete, Greece.
  - **Tutorial Co-Organizer** on »Machine Ethics« at the *33rd International Joint Conference on Artificial Intelligence* (IJCAI 2024), 3 August 9 August, 2024, Jeju, South Korea.
- Special Track Co-Organizer of »Responsible and Trustworthy AI: Normative Perspectives on and Societal Implications of AI Systems« at the 1st Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISOLA 2024), 23 28 October 2023, Crete, Greece.
  - Special Track Co-Organizer of »Interdisciplinary Perspectives on XAI« at the 1st World Conference on eXplainable Artificial Intelligence (xAI 2023), 26 28 July 2023, Lisboa, Portugal
- Workshop Co-Organizer of »Issues in Explainable AI: Blackboxes, Recommendations, and Levels of Explanation«, 30 September 2 October, 2019, Saarbrücken, Germany.

### **Program Committee Memberships**

- Program Committee Member of the 24rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2025), 19 May 23 May, 2025, Detroit, Michigan, United States.
- Program Committee Member of the workshop Formal Ethical Agents and Robots

  (FEAR) co-located with The 19th International Conference on Integrated Formal Methods

  (iFM 2024), 13 November 15 November, 2024, Manchester, UK.
  - Program Committee Member of the 2nd Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2024), 30 October 3 November, 2024, Crete, Greece.
  - **Program Committee Member** of the 7th AAAI/ACM Conference on AI, Ethics, and Society (AIES 2024), 21 23 October, 2024, Santa Clara, California, USA.

## Scientific Services & Science Infrastructure (continued)

- Program Committee Member of the workshop track on Value Engineering in AI (VALE) at the International Workshop on AI Value Engineering and AI Compliance Meechanisms (VECOMP) affiliated with the 27th European Conference on Artificial Intelligence (ECAI 2024), 19 24 October, 2024, Santiago de Compostela, Spain.
- Program Committee Member of (the track on »Agents in Ethics« at) the 21st European Conference on Multi-Agent Systems (EUMAS 2024), 26 28 August 2024, Dublin, Ireland.
- Program Committee Member of the 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2024), 6 10 May 2024, Auckland, New Zealand.
- Program Committee Member of the 1st Artificial Intelligence Symposium On Leveraging Applications of Formal Methods, Verification and Validation (AISoLA 2023), 23 28 October 2023, Crete, Greece.

#### **Reviewer Activities for Academic Journals**

Philosophical Studies, Synthese, Philosophy & Technology, Big Data & Society, Communications of the ACM

### Ethics Committees, Commissions, Advisory, and Board Functions

- Member of the **Strategy Board of the Saarland de:hub on** *Artificial Intelligence*, responsible for the topic of trustworthy AI in the context of sustainable transformation.
  - Member of the **delegation of Federal Minister of Education and Research Bettina**Stark-Watzinger for the high-level UK-German Science, Innovation and Technology Dialogue, Imperial College White City Campus in London, March 12.
- Ethics Advisor. Ethics Team, German Research Center for Artificial Intelligence (DFKI).
  - DFKI Representative in the *East Side Fab e.V.* board (on behalf of Prof. Verena Wolf).
- Member of the **Ethical Review Board**. Faculty of Mathematics and Computer Science, Saarland University.
- Permanent expert on digital ethics at the Enquête Commission »Digitalisierung im Saarland Bestandsaufnahme, Chancen und Maßnahmen« of the Saarland State Parliament.
- 2019-2022 Member and Deputy Chairman of the **\*\*Kommission für die Ethik sicherheits-relevanter Forschung\***. Saarland University.
- **Ethics Advisor**. Undisclosed Horizon 2020 Project (together with Sarah Sterz and Timo Speith).

## Miscellaneous Experience

#### **Further Experiences**

Media

I have participated in various media productions, from regional outlets (SR (radio, including features), SZ) to national ones (DLF: Das war der Tag, DLF Kultur: Breitband, DLF-Kultur: Studio 9, DLF: Campus & Karriere, ARD Panorama) to online formats (podcasts on various topics, Youtube, heise online, Spektrum der Wissenschaft and other formats). Recently I was interviewed by Handelsblatt. I come from a journalism household and practically grew up with recording technology. I also became the UdS's contact person for machine ethics, XAI, technology assessment, and the ethics of digitalization as part of the expert service for journalists.

Politics and Regulation

I was involved in the preparation of statements for the state parliament on topics such as computer-aided procedures at the Saarland police in the area of accident investigation and the use of technology in the school context (Bildungsausschuss, March 2023), but also for the Bundestag (on the draft of an act on autonomous driving). In addition, my advice was taken up by the Saarland State Commissioner for Data Protection and Freedom of Information, and I was involved in background discussions with politicians in the Bundestag and the European Parliament on issues relating to the design and classification of two drafts of the AI Act.

Startups, SMEs, Industry

In the past, I have designed and organized various large-scale, paid consultations and workshops for clients like Villeroy & Boch and Accso. I also have start-up experience: I was part of an EXIST-Gründungsstipendium funded team (2016 to 2017). In the last years, I have built up reliable contacts with various medium-sized companies and industrial partners, including ZF and eurodata.

### **Memberships**

since 2019 Algoright e.V. (non-profit/»gemeinnützig«), founding member

since 2018 **Gesellschaft für Informatik** (GI)

Universitätsgesellschaft des Saarlandes e.V.

since 2016 Gesellschaft für Utilitarismusstudien (GUS), founding member

since 2015 **Gesellschaft für Analytische Philosophie** (GAP)

# Language Skills & Hobbies

### Languages

German (native), English (fluent)

#### **Hobbies**

streetball, bouldering, hiking, reading (fiction), chess, cats

#### References

**Prof. Elijah Millgram** Distinguished Professor in Philosophy

Philosophy Department

215 Central Campus Dr, Room 467 University of Utah, Salt Lake City, USA E-mail: Lije.Millgram@m.cc.utah.edu

Web: https://www.elijahmillgram.net/

**Prof. Dr. Marija Slavkovik** Professor for Artificial Intelligence

Postboks 7802

Universitetet i Bergen (UiB) 5020 Bergen, Norway

E-mail: <a href="marija.slavkovik@uib.no">marija.slavkovik@uib.no</a>
Web: <a href="https://slavkovik.com/">https://slavkovik.com/</a>,

**Prof. Dr. Susanne Mantel** Professor for Practical Philosophy

Philosophisches Seminar Universität Heidelberg

Schulgasse 6 69117 Heidelberg

E-Mail: susanne.mantel@uni-heidelberg.de

Web: https://www.uni-heidelberg.de/fakultaeten/philoso-

phie/philsem/personal/mantel\_team.html

**Prof. Dr. Markus Langer** Professor of Work and Organizational Psychology

Albert-Ludwigs-Universität Freiburg

Institut für Psychologie Engelbergerstraße 41 79085 Freiburg

E-Mail: Markus.Langer@psychologie.uni-freiburg.de

Web: https://www.psychologie.uni-freiburg.de/Mem-

bers/langer/langer.html

**Prof. Dr. Anne Lauber-Rönsberg** Professor of Civil Law, Intellectual Property Law, in particular

Copyright Law, as well as Media and Data Protection Law

Institut für Internationales Recht, Geistiges Eigentum

und Technikrecht (IRGET)

Philosophische Fakultät der TU Dresden

01062 Dresden

E-Mail: office.lauber-roensberg@tu-dresden.de

Web: https://tu-dresden.de/gsw/phil/irget/jfbimd13/die-profes-

sur/prof-dr-anne-lauber-roensberg