

CONTACT INFORMATION	Computer Science and Public Policy Hertie School Friedrichstr. 180 10117 Berlin Germany		Phone: +49 30 259 219 - 156 E-mail: <a href="mailto:kaack@hertie-school.org">kaack@hertie-school.org</a> Website: <a href="https://lynnkaack.com">https://lynnkaack.com</a>
EDUCATION	<b>Carnegie Mellon University</b> , Pittsburgh, PA, USA		<b>2014–2019</b>
	<b>Ph.D.</b> , Engineering and Public Policy, May 2019		
	<ul style="list-style-type: none"> <li>Title: <i>Challenges and Prospects for Data-Driven Climate Change Mitigation</i></li> <li>Thesis committee: M. Granger Morgan (chair), Jay Apt, Patrick McSharry, Inês Azevedo, Parth Vaishnav</li> </ul>		
	<b>M.S.</b> , Machine Learning, December 2018		
	<ul style="list-style-type: none"> <li>Secondary master's degree from the School of Computer Science</li> </ul>		
	<b>Freie Universität Berlin</b> , Berlin, Germany		<b>2007–2013</b>
	<b>M.S.</b> , Physics, September 2013		
	<ul style="list-style-type: none"> <li>Thesis title: <i>Crossover Behavior on Spatial Interdependent Complex Networks</i></li> <li>Advisors: Felix von Oppen (FU Berlin), Rick Durrett (Duke University)</li> </ul>		
	<b>B.S.</b> , Physics, September 2010		
	<ul style="list-style-type: none"> <li>Minor in Economics</li> </ul>		
EMPLOYMENT HISTORY	<b>Duke University</b> , Department of Physics, Durham, NC, USA		<b>2011–2013</b>
	Direct exchange program between Duke University and FU Berlin		<b>2011–12</b>
	Visiting scholar for master's thesis project		<b>2012–13</b>
	<b>Hertie School</b> , Data Science Lab, Berlin, Germany		
	Assistant Professor of Computer Science and Public Policy	<b>8/2021–present</b>	
	Parental leave	<b>1/2023–6/2023</b>	
	<b>Climate Change AI</b> , Pittsburgh, USA		
	Co-founder and Chair	<b>6/2019–present</b>	
	<b>ETH Zürich</b> , Energy Technology and Policy Group, Zürich, Switzerland		
	Postdoctoral Researcher	<b>4/2019–7/2021</b>	
	Lecturer	<b>2/2020–7/2021</b>	
	<b>Carnegie Mellon University</b> , Department of Engineering and Public Policy, Pittsburgh, PA, USA		
	Postdoctoral Research Scientist	<b>2/2019–4/2019</b>	
	Research Assistant	<b>9/2014–2/2019</b>	

United Nations University  
Institute for the Advanced Study of Sustainability, Tokyo, Japan

Visiting Research Assistant 6/2017–8/2017

Community Environmental Council, Santa Barbara, CA, USA

Volunteer Intern 4/2014–6/2014

Miller & Meier Consulting, Berlin, Germany

Intern 1/2014–3/2014

## PUBLICATIONS

Sewerin, S.\*, **Kaack, L. H.\***, Küttel, J., Sigurdsson, F., Martikainen, O., Esshaki, A., and Hafner, F., Towards understanding policy design through text-as-data approaches: The POLIcy design ANNotAtions (POLIANNA) dataset (in review at *Scientific Data*).

\*Authors contributed equally.

Milojevic-Dupont, N., Wagner, F., Nachtigall, F., Hu, J., Brüser, G.B., Zumwald, M., Biljecki, F., Heeren, N., **Kaack, L. H.**, Pichler, P.P. and Creutzig, F. (2023) EUBUCCO v0. 1: European building stock characteristics in a common and open database for 200+ million individual buildings. *Scientific Data*, 10(1), p.147.

Creutzig, F., Acemoglu, D., Bai, X., Edwards, P. N., Hintz, M.J., **Kaack, L. H.**, Kilkis, S., Kunkel, S., Luers, A., Milojevic-Dupont, N. and Rejeski, D. (2022) Digitalization and the Anthropocene. *Annual Review of Environment and Resources*, 47.

**Kaack, L. H.**, Donti, P. L., Strubell, E., Kamiya, G., Creutzig, F. and Rolnick, D. (2022) Aligning artificial intelligence with climate change mitigation. *Nature Climate Change*, pp.1-10.

**Kaack, L. H.** (2021) Solar-panel detection goes global *Nature News & Views*. (Commentary, not peer-reviewed)

Milojevic-Dupont, N., Hans, N., **Kaack, L. H.**, Zumwald M., Andrieux, F., de Barros Soares, D., Lohrey, S., Pichler, P. P. & Creutzig, F. (2020) Learning from urban form to predict building heights. *PLOS ONE*, 15(12), p.e0242010.

Rolnick, D., Donti, P. L., **Kaack, L. H.\***, Kochanski, K., Lacoste, A., Sankaran, K., Slavin Ross, A., Milojevic-Dupont, N., Jaques, N., Waldman-Brown, A., Luccioni, A., Maharaaj, T., Sherwin, E. D., Mukkavilli, S. K., Kording, K. P., Gomes, C., Ng, A. Y., Hassabis, D., Platt, J. C., Creutzig, F., Chayes, J., & Bengio, Y. (2023) Tackling climate change with machine learning. *ACM CSUR* (arXiv preprint 2019)  
\*Co-editor of full paper, section author of “Transportation” and “Buildings and Cities.”

**Kaack, L. H.**, Chen, G. H., & Morgan, M. G. (2019) Truck traffic monitoring with satellite images. *ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS) (COMPASS '19)*, ACM, New York, NY, USA.

**Kaack, L. H.**, Vaishnav, P., Morgan, M. G., Azevedo, I. L., & Rai, S. (2018) Decarbonizing intraregional freight systems with a focus on modal shift. *Environmental Research Letters*, 13(8), 083001.

**Kaack, L. H.**, Apt, J., Morgan, M. G., & McSharry, P. (2017). Empirical prediction intervals improve energy forecasting. *Proceedings of the National Academy of Sciences*, 114(33), 8752-8757.

**Kaack, L. H.**, & Katul, G. G. (2013). Fifty years to prove Malthus right. *Proceedings of the National Academy of Sciences*, 110(11), 4161-4162. (Commentary, not peer-reviewed)

#### PREPRINTS

Kaiser, S., Klein, N. and **Kaack, L. H.** (2023). Predicting cycling traffic in cities: Is bikesharing data representative of the cycling volume?

Friederich, D., **Kaack, L. H.**, Luccioni, A., & Steffen, B. (2021). Automated Identification of Climate Risk Disclosures in Annual Corporate Reports. arXiv preprint arXiv:2108.01415.

#### POLICY BRIEFS

Rolnick, D., Clutton-Brock, P., Donti, P. L., **Kaack, L. H.**, et al. (2021) Climate Change and AI: Recommendations for Government Action. Global Partnership on AI (GPAI) Report

**Kaack, L. H.**, Donti, P. L., Strubell, E. & Rolnick, D. (2020) Artificial Intelligence and Climate Change: Opportunities, considerations, and policy levers to align AI with climate change goals. Heinrich Böll Stiftung Brussels, e-paper.

#### SCHOLARSHIPS, AWARDS AND GRANTS

**Federal Ministry of Education and Research (Germany)** (with L. Hirth)  
“Machine Learning in Electricity Market Research” (ML-Strom),  
total funding €450,351. **12/2022**

**Horizon Europe** (with S. Jankin)  
“Climate Action To Advance Healthy Societies in Europe” (CATALYSE), total funding €10.354MM. Hertie component €975K **9/2022**

Semi-Finalist, MIT Technology Review Innovators Under 35 **2022**

**Swiss National Science Foundation (SNF)** (with S. Sewerin)  
Spark Grant, CHF 96,623 **12/2019**

**ETH Zurich Foundation**  
Career Seed Grant, CHF 30,000 **12/2019**

**DigitalGlobe Foundation**  
Satellite imagery grant **5/2018**

**Microsoft AI for Earth Azure Grant**  
Computing credits on Azure cloud computing service **5/2018**

**Studienstiftung des deutschen Volkes**  
(*German Academic Scholarship Foundation*)  
• Full study scholarship for high achieving and proactive students **2007-2013**  
• Scholarship for two years of study in the U.S. (*Auslandsstipendium*) **2011-2013**

**Duke University Direct Exchange Program**  
Tuition and living expenses for nine months of study abroad **9/2011-5/2012**

TEACHING AND  
SUPERVISION

**Faculty**, Hertie School

<i>Artificial intelligence &amp; climate change</i> (graduate course)	<b>Fall 2023</b>
<i>Deep learning</i> (graduate course)	<b>Fall 2023</b>
<i>Deep learning</i> (graduate course)	<b>Fall 2022</b>
<i>Mathematics for data science</i> (graduate course)	<b>Spring 2022</b>
<i>Artificial intelligence &amp; climate change</i> (graduate course)	<b>Fall 2021</b>

**Lecturer**, ETH Zurich

<i>Policy Analysis I</i> (graduate course), with T. Schmidt and B. Steffen	<b>Fall 2020</b>
<i>Policy Analysis I</i> (graduate course), with T. Schmidt and B. Steffen	<b>Fall 2019</b>

**Guest lectures**

- “AI and Climate Change”, [Karen Spärck Jones Lecture](#) by BCS Academy of Computing **3/2022**
- Several guest lectures, *Machine Learning Applied to Climate Change* (graduate course), McGill University, course instructor: D. Rolnick **Spring/2021**
- “AI & Climate Change”, *Responsible AI* (undergraduate course), Johannes Kepler Universität Linz, course instructor: M. Mara **11/2020**

**PhD supervision**

- Chiara Fusar Bassini, Hertie School **7/2023 - present**
- Nitsan Shakked, Hertie School **9/2022 - present**
- Silke Kaiser, Hertie School **6/2022 - present**
- Josefine Hintz, TU Berlin, co-supervised with Felix Creutzig **4/2022 - present**

**PhD committee**

- Raffaele Sgarlato, Hertie School, third advisor **7/2022 - 9/2023**
- Arsam Aryandoust, ETH Zürich, external committee member **7/2023**
- Tarun Khanna, Hertie School, chair of the PhD committee **10/2022**

LEADERSHIP  
ROLES AND  
RESPONSIBILITIES

Co-founder and chair of <a href="#">Climate Change AI</a>	<b>6/2019 - present</b>
• \$1.2 million second round of Innovation Grants program funded by Quadrature Climate Foundation and DeepMind	<b>2022/23</b>
• \$1.8 million first round of Innovation Grants program funded by Schmidt Futures and Quadrature Climate Foundation	<b>2021</b>
• Eight full-day conference workshops with peer-review process	<b>2019-2023</b>
• Summer school series	<b>2022 &amp; 23</b>

Coordinator of [Climate Change and AI Berlin Brandenburg](#) in the Einstein Center Climate Change and Public Policy of Human Settlements **9/2021 - present**

Member of the [Austrian Council on Robotics and Artificial Intelligence](#) (ACRAI) **10/2020 - 10/2021**

WORKSHOP AND  
CONFERENCE  
ORGANIZATION

COP26 side event: “[AI for Climate Action](#)”, **lead organizer**, *UNFCCC Conference of the Parties (COP) 26, German Pavilion*, Glasgow, UK **11/2021**

Conference panel: “[Text as Data: New Approaches and Empirical Applications for Analysing Policy and Legislative Texts](#),” *International Public Policy Association (ICPP5 - Barcelona 2021)*, Barcelona, Spain **7/2021**

Workshop: “Tackling climate change with machine learning,” *Thirty-fourth Neural Information Systems Processing (NeurIPS 2020)*, virtual event **12/2020**

Workshop: “Tackling climate change with machine learning,” *Ninth International Conference on Learning Representations (ICLR 2020)*, 5-day virtual event **4/2020**

Conference track: “AI & Climate Change,” **lead organizer**, *Applied Machine Learning Days (AML D) 2020*, Lausanne, Switzerland **1/2020**

Workshop: “Tackling climate change with machine learning,” *Thirty-third Neural Information Systems Processing (NeurIPS 2019)*, Vancouver, BC, Canada **12/2019**

COP25 side event: “Artificial intelligence: Applications in climate mitigation and adaptation”, **lead organizer**, *UNFCCC Conference of the Parties (COP) 25*, *Chile Pavilion*, Madrid, Spain **12/2019**

Workshop: “Climate Change: How Can AI help”, co-organizer, *Thirty-sixth International Conference on Machine Learning (ICML 2019)*, Long Beach, CA, USA **6/2019**

Workshop: “Workshop on Strategies and Opportunities for Decarbonizing the World’s Freight System”, Carnegie Mellon University, Pittsburgh, PA, USA **2/2017**

INVITED TALKS  
AND PANEL  
DISCUSSIONS  
(SELECTION)

Grüne Bundestagsfraktion (MdB Tabea Rößner and MEP Sergey Lagodinsky), *Fachgespräch “ChatGPT & Co nachhaltig und demokratisch gestalten”*, panel discussion (with Friederike Rohde, Lukas Klingholz), Paul-Löbe-Haus, Berlin **8/2023**

Czech Republic in the framework of the Presidency of the Council of the European Union, under the patronage of UNESCO, Global Forum on the Ethics of AI, panel discussion (with Marek Havrda, John Shawe-Taylor, Juha Heikkilä, Nayat Sanchez-Pi, Radim Polčák, Marek Rosa) **12/2022**

Austrian Academy of Sciences, Digitally Sustainable? The (In)Visible Hand of Artificial Intelligence in the Agenda 2030 **12/2022**

Gesellschaft für Informatik, Digital GreenTech Konferenz 2022, invited keynote **11/2022**

UN Science Summit, “How can we use machine learning to help fight climate change?”, panel discussion (virtual, with Angel Hsu, Catherine Nakalembe, Peter Dueben) **9/2022**

Launch of the SustAI n Magazine, *Politischer Rückenwind für nachhaltige KI?* (virtual, with Sergey Lagodinsky, Pascal König, Marcel Dickow) **6/2022**

Harvard Center for Research on Computation and Society (CRCS), *The Future of AI for Social Impact* (virtual, with Fei Fang, Danaë Metaxa, and Brian Wilder) **4/2022**

UNEP, *Digital Discovery Session: Using Artificial Intelligence for Climate Action* (virtual) **3/2022**

- Deutsche Energie-Agentur (dena), *Künstliche Intelligenz: Enabler für eine erfolgreiche Energiewende?* (virtual, with Stephan Ramesohl and Heike Brugger) **3/2022**
- Austrian Academy of Sciences (ÖAW), How sustainable is the footprint of digital technologies? An online workshop on digital technologies, energy, and sustainability *AI and Climate Change* (virtual) **3/2022**
- Scientific Council of the Max Planck Society for the Advancement of Science, *Fundamental Research and Shaping the Future: Digitization and sustainability* (virtual) **2/2022**
- Friedrich-Ebert-Stiftung, Digitaler Kapitalismus *Panel: Digitalisierung und Nachhaltigkeit* (with Dirk Messner and Philipp Staab) **11/2021**
- Deutsches Forschungsinstitut für öffentliche Verwaltung Speyer, Uni Speyer, Heinrich-Böll-Stiftung, and iRights.Lab, *Vision for a digital Europe 2025*, (Berlin, with Tilman Santarius, Rena Kleine, and Tiemo Wölken) **10/2021**
- Slovenian Presidency of the Council of the European Union and European Commission (DG Connect), *High-Level conference on AI “From ambition to action”* **9/2021**
- Bayerischer Landtag, Anhörung *Künstliche Intelligenz: Chancen und Herausforderungen für die bayerische Wirtschaft* **4/2021**
- European Parliament, Special Committee on Artificial Intelligence in a Digital Age, *Public hearing on AI and Green Deal* **1/2021**
- Heinrich Böll Stiftung Brussels - European Union, *How Artificial Intelligence could help mitigate climate change*, briefing & e-paper presentation (virtual) **12/2020**
- Digital-Gipfel 2020, Plattform Lernende Systeme, *KI für eine nachhaltige Gesellschaft* (virtual) **30/2020**
- Bundestagsfraktion Bündnis 90/Die Grünen, Schwerpunktsitzung der AG Digitalpolitik, *Künstliche Intelligenz und Klimawandel* (virtual briefing) **11/2020**
- Mercator Research Institute on Global Commons and Climate Change (MCC), Berlin, Germany, Research Seminar Series, *Leveraging computational text analysis for climate policy* (virtual) **10/2020**
- Austrian Council on Robotics and Artificial Intelligence, *Discussion round: “AI for climate change mitigation and environmental protection”* (virtual) **10/2020**
- Representation of the European Commission in Germany and Alexander von Humboldt Institut für Internet und Gesellschaft, Berlin, Germany, *Roundtable: Künstliche Intelligenz und Nachhaltigkeit - Klimafreundliche europäische KI?* **9/2020**
- Austrian Council on Robotics and Artificial Intelligence, *Ars Electronica 2020, AI x Ecology* (virtual) **9/2020**
- Goethe Institut, *Couch Lessons, AI + Climate Change* (virtual) **6/2020**
- Institute of Science and Technology (IST Austria), Young Scientist Symposium 2020, *Tackling Climate Change with Machine Learning* (virtual) **5/2020**

Clean Energy Leadership Institute (CELI), Oakland, USA, [CELI Webinar](#),  
*Harnessing Artificial Intelligence to Fight Climate Change* (virtual) **4/2020**

Zürcher Hochschule für Angewandte Wissenschaften (ZHAW), [ZHAW digital](#), Zurich,  
 Switzerland, *Panel: Kann KI uns helfen, globale Herausforderungen zu meistern?*  
 (with Jürgen Schmidhuber and Ricardo Chavarriaga) **3/2020**

UNFCCC Conference of the Parties (COP25), [Chile Pavilion](#), Madrid, Spain,  
*AI for climate change policy* **12/2019**

Heinrich Böll Foundation, Transatlantic Networking Event: Policies for a just and  
 green digital transformation, Berlin, Germany, *AI for climate change policy* **11/2019**

Institute for Atmospheric and Climate Science, ETH Zurich,  
 Brown Bag Lunch Statistical Learning, Switzerland, *Tackling climate change with  
 machine learning* **11/2019**

Computational Sustainability Network, [CompSust Open Graduate Seminar](#), *Truck  
 traffic monitoring with satellite images* (virtual) **1/2019**

[U.S. Energy Information Administration](#), Energy Forecasting Forum,  
 Washington D.C., USA, *An Application of Empirical Prediction Intervals to Energy  
 Forecasting* **4/2016**

CONFERENCE AND  
 WORKSHOP  
 PRESENTATIONS

“Climate Change and Machine Learning: Opportunities, Challenges, and Consider-  
 ations” (tutorial with Priya Donti and David Rolnick), [Thirty-ninth International  
 Conference on Machine Learning \(ICML\)](#) **7/2022**

Moderator at National Academies workshop “Development of a Framework for Eval-  
 uating Global Greenhouse Gas Emissions Information for Decision Making: A Work-  
 shop” **6/2022**

“Opportunities, considerations, and policy levers to align AI with climate change  
 goals” (keynote), DACH+ Conference on Energy Informatics **9/2021**

“Uncovering policy designs from legal texts”  
 Data for Policy 2020, 5th International Conference **9/2020**

“Uncovering policy designs from legal texts”  
 Workshop on Institutional Grammar, Faculty of Political Science and International  
 Studies, University of Warsaw (virtual) **6/2020**

“Truck traffic monitoring with satellite images”  
[ACM SIGCAS Conference on Computing and Sustainable Societies \(COMPASS\)](#),  
 Accra, Ghana (virtual) **7/2019**

“Truck traffic monitoring with satellite images”  
[Climate Change: How Can AI Help](#), [Thirty-sixth International Conference on Ma-  
 chine Learning \(ICML 2019\)](#), Long Beach, CA, USA **6/2019**

“Decarbonizing Global Freight Transportation with a Focus on Modal Shift.”  
[36<sup>th</sup> USAEE/IAEE North American Conference](#), Washington, DC, USA **9/2018**



“Vehicle counting with deep convolutional neural networks for sustainable freight transportation.” [Machine Learning in Science and Engineering \(MSLE\)](#), Carnegie Mellon University, USA **6/2018**

“Systemic Low-Carbon Energy Technologies”  
Sustainable Energy Transitions Initiative (SETI) 2018 Spring Meeting, Duke University, USA **5/2018**

“Decarbonizing Global Freight Transportation with a Focus on Modal Shift.”  
[International Railway Symposium Aachen \(IRSA\)](#), RWTH Aachen, Germany **11/2017**

“Intraregional Freight Transportation: Intermodal Freight Transport and Modal Shift.”  
[Workshop on Strategies and Opportunities for Decarbonizing the World’s Freight System](#), Carnegie Mellon University, USA **2/2017**

“An Application of Empirical Prediction Intervals to Energy Forecasting.”  
[TMP Graduate Consortium](#), University of Cambridge, United Kingdom **6/2016**

“The Applicability of Empirical Prediction Intervals to Energy Forecasting.”  
[33<sup>th</sup> IAEE International Conference](#), Bergen, Norway **6/2016**

“Introducing Probability into Energy Forecasting.” (poster),  
[33<sup>rd</sup> USAEE/IAEE North American Conference](#), Pittsburgh, PA, USA **10/2015**

#### EDITORIAL BOARD

Early Career Editorial Advisory Board (EAB) of Transportation  
Research part C **2021 - present**

JOURNAL SERVICE Reviewer for *Nature*, *PNAS*, *Nature Sustainability*, *AAAI AISI*, *Energy Economics*, *Energy Research & Social Science*, *Patterns from Cell Press*, *Transportation Research Record*; *ICML*, *NeurIPS*, and *ICLR* workshops; and *International Joint Conference on Artificial Intelligence* special track.

#### FUNDING PROGRAMS

Proposal reviews for the US National Science Foundation, the Federal Ministry for Economic Affairs and Climate Action in Germany, the Alexander von Humboldt Foundation, and Vinnova/the Ministry of Enterprise and Innovation in Sweden.

#### MEMBERSHIPS IN PROFESSIONAL ASSOCIATIONS

Association for Computing Machinery (ACM)

#### PROGRAMMING SKILLS

Python, R

#### LANGUAGES

German: Native  
English: Full professional proficiency  
Italian: Conversational