# Nikola Milojevic-Dupont

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| CONTACT INFORMATION | EUREF-Campus, Torgauer Str. 12–15, building 19, office 1.01, 10829 Berlin, Germany | milojevic@mcc-berlin.net milojevicdupontnikola.github.io @Nikola_MD Google scholar |

**RESEARCH FOCUS**

**Topics:** Climate change mitigation; Urban sustainability, planning & morphology; Buildings & mobility sectors; Open data

**Methods:** Machine learning; Geographical information system; Energy modelling

**EDUCATION**

**Technische Universität Berlin**, Berlin, Germany
PhD candidate, 2018–2023 (expected)
Thesis advisor: Prof. Dr. Felix Creutzig

**AgroParisTech, Ecole des Ponts ParisTech, School for Advanced Studies in the Social Sciences (EHESS), Paris Nanterre University**, Paris, France
M.S. in Environmental Economonics, 2016–2017
Major in Integrated Assessment Modelling, at CIRED

**University of Paris 1 Pantheon-Sorbonne**, Paris, France
M.S. in International Economics, 2015–2016
Best of class

**University of Paris 1 Pantheon-Sorbonne**, Paris, France
B.S. in Economics, 2011–2015

**PROFESSIONAL EXPERIENCE**

**Mercator Research Institute on Global Commons and Climate Change (MCC)**, Berlin, Germany
PhD student researcher, 2018–Present

**Potsdam Institute on Climate Impact Research (PIK)**, Potsdam, Germany
Guest researcher, 2017(Aug.)–2017(Oct.)

**Potsdam Institute on Climate Impact Research (PIK)**, Potsdam, Germany
Research assistant to Dr. Nico Bauer, 2017(Mar.)–2017(Aug.)

**PEER-REVIEWED JOURNAL PUBLICATIONS**

**6. Digitalization and the Anthropocene.** Creutzig, F., Acemoglu, D., Bai, X., Edwards, P.N., Hintz, M.J, Kaack, L.H., Kilkis, S., Kunkel, S., Luers, L., Milojevic-Dupont, N., Rejeski, D., Renn, J., Rolnick, D., Rosol, C., Russ, D., Turnbull, T., Verdolini, E., Wagner, F., Wilson, C., Zekar, A., Zumwald, M. (2021)

**5. A novel machine learning framework to identify location-specific relevance of built environment for urban motorised travel.** Wagner, F., Milojevic-Dupont, N., Franken, L., Zekar, A., Thies, B., Koch, N., Creutzig, F. (2021)

**4. *Buildings and Cities***, Milojevic-Dupont N. & Kaack, L. H.
and ***Collective Decisions***, Maharaj, T. & Milojevic-Dupont N.

in **Tackling climate change with machine learning.**
Rolnick, D., Donti, P. L., Kaack, L. H., Kochanski, K., Lacoste, A., Sankaran, K., Ross AS, Milojevic-Dupont, N., Jaques, N., Waldman-Brown, A. Luccioni, A., Maharaj, T., Sherwin, E. D., Mukkavilli, S. K., Kording, K. P., Gomes, C., Ng, A. Y., Hassabis, D., Platt, J. C., Creutzig, F., Chayes. F. & Bengio, Y. (2022)
*ACM Computing Surveys* 55, 2, Article 42

**3. Learning from urban form to predict building heights.\*** Milojevic-Dupont, N., Hans, N., Kaack, L. H., Zumwald, M, Andrieux, F., de Barros Soares, D., Lohrey, S., Pichler, P.P. & Creutzig, F. (2020) *PLoS ONE* 15(12): e0242010
*\* featured in PLOS ONE Collection – Cities as Complex Systems*

**2. Machine learning for geographically differentiated climate change mitigation in urban areas.** Milojevic-Dupont, N., & Creutzig, F. (2020). *Sustainable Cities and Society*, 102526

**1. Fair street space allocation: ethical principles and empirical insights.**
Creutzig, F., Javaid, A., Soomauroo, Z., Lohrey, S., Milojevic-Dupont, N., Ramakrishnan, A., ... & Weddige, U. (2020). *Transport Reviews*, 1-23

<div style="display:flex">
<div>PEER-REVIEWED CONFERENCE PROCEEDINGS</div>
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**3. Understanding the impact of the built environment on travelled vehicle kilometres in Berlin**, Felix Wagner, Milojevic-Dupont, N., Franken L., Zekar, A., Thies, B., Koch, N., and Creutzig, F. (2021) *The 28th International Seminar of Urban Form (ISUF)*

**2. Estimating energy demand of buildings . . . by learning their heights**, Milojevic-Dupont, N., Pichler, P.P., Kaack, L. H., Lohrey, S., & Creutzig, F. (2019) *OpenStreetMap State Of The Map*

**1. Low-carbon urban planning with machine learning**, Milojevic-Dupont, N., & Creutzig, F. (2019) *Climate Change AI workshop at the International Conference on Machine Learning (ICML)*

MANUSCRIPTS UNDER REVIEW

**Urban form features determine spatio-temporal variation of ambient temperature: A comparative study of three European cities.** Zekar, A., Milojevic-Dupont, N., Zumwald, M., Wagner, F. and Creutzig, F. (2022)

**EUBUCCO: European building stock characteristics in a common & open database for 206m individual buildings.** Milojevic-Dupont, N., and Wagner, F., Hu, J., Zumwald, M., Nachtigall, F., Biljecki, F., Heeren, N., Kaack, L. H., Pichler, P.-P. and Creutzig, F. (2022)

**Open government geospatial data on buildings for planning sustainable and resilient cities.** Biljecki, F., Chew, L. Z. X., Milojevic-Dupont, N., Creutzig, F. (2021) Preprint: *arXiv:2107.04023.*

CONFERENCE PRESENTATIONS

*EUBUCCO: European building stock characteristics in a common open database for 206m individual buildings.* Conference of the International Society for Industrial Ecology (ISIE) - Socio-Economic Metabolism Section, 2022

*Mapping 200 million European buildings in 2.5D to support policy-making*, Data for Policy conference, 2021

*Estimating energy requirements for thermal comfort in the European Union at individual building level*, International Energy Workshop, 2021

*Estimating energy demand of buildings . . . by learning their heights*, OpenStreetMap State Of The Map, 2019

*Estimating latent energy demand of buildings with open data*, 13th Conference of the International Society for Industrial Ecology (ISIE) - Socio-Economic Metabolism Section, 2019

*Low-carbon urban planning with machine learning*, Spotlight presentation, Climate Change AI workshop at the International Conference on Machine Learning (ICML), 2019

OTHER PRESENTATIONS

*Artificial Intelligence and Climate Change*, UNITAR, 2022

*Transportation Lecture*, Climate Change AI Summer School, 2022

*New data modelling tools for urban climate change mitigation? Berlin-Brandenburg, the EU, and worldwide*, Einstein Center Climate Change and Public Policy of Human Settlements Symposium, 2022

*WiDS Datathon Data Science and Climate Change Webinar*, Panel discussion, Women in Data Science, 2022 [video]

*A user-driven data space: is INSPIRE ready?*, Presentation and panel discussion, INSPIRE Conference, session "Modernising INSPIRE within the European Green Deal data space", 2021

*Machine Learning for low-carbon urban planning*, AI for Sustainable Finance Seminar, The Alan Turing Institute / Oxford University, 2021

*Tackling climate change with machine learning*, Panel discussion at the United Nations Environment Programme's Digital Transformation Conference for Environmental Sustainability, 2021

*Data-driven policy making for sustainable cities*, Panel discussion at Artificial Intelligence for Sustainable Cities Network Malaysia, 2021

*Tackling climate change with machine learning*, Keynote presentation at Machine Learning Week Europe, Predictive Analytics World, 2021

*Tackling climate change with machine learning (in urban areas)*, Guest lecture at the Lee Kuan Yew Center for Innovative Cities Singapore, 2021

*Tackling climate change with machine learning*, German AI Association (KI Bundesverband), 2020

AI for sustainable urban planning (in French), Week on Cities and AI, University of Paris 1 Pantheon-Sorbonne, Chair Entrepreneurship, Territory, Innovation, 2020 [video]

*Summary of the Tackling Climate Change with Machine Learning paper* (with the

CCAI team), TEDx Countdown Climate Change AI, 2020

*Sustainable urban planning with machine learning*, Cimpatico Studios, 2020

*Can machine learning help the transition to low-carbon mobility?*, AGYA Workshop Governance of Smart Mobility Data, Reiner Lemoine Institute, 2019

*Deploying artificial intelligence to climate change mitigation semantics: a systematic review*, Berlin International Graduate School in Model and Simulation based Research (BIMoS) PhD seminar, 2019

*Upscaling urban climate solutions with ML approaches* (with Felix Creutzig), TU Berlin Machine Learning group PhD seminar, 2018

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| PROGRAM ORGANIZATION | Women in Data Science Conference, Stanford University<br>WiDS Datathon (committee member), 2022 [video]<br><br>International Conference on Learning Representations (ICLR)<br>Energy day of the Climate Change AI workshop (co-organizer), 2019<br><br>Applied Machine Learning Days, EPFL<br>Climate Change AI track (lead organizer), 2019 [video] |
| PROFESSIONAL SERVICE | **Climate Change AI**<br>Climate Change AI is a global initiative to catalyze impactful work at the intersection of climate change and machine learning.<br><br>Founding member (2019)<br>Member of the Board of Directors (2021–present)<br>Chair of the Content Committee (2021–present)<br>Community Lead for Buildings and Transportation (2020–2022)<br><br>**Assessment reports:** Contributing Author of the IPCC 6th Assessment Report, Working Group III, Chapter 16: Innovation, technology development and transfer<br><br>**Journals (Reviewer):** Applied Energy, Environmental Science Technology, Journal of Industrial Ecology, PeerJ Computer Science, IEEE Latin America Transactions, Geoscientific Model Development<br><br>**Conferences (Meta-Reviewer):** Climate Change AI workshop at the Conference on Neural Information Processing Systems (NeurIPS), Climate Change AI workshop at the International Conference on Machine Learning (ICML)<br><br>**Conferences (Reviewer):** Climate Change AI workshop at the Conference on Neural Information Processing Systems (NeurIPS), Climate Change AI workshop at the International Conference on Machine Learning (ICML), Climate Change AI workshop at the International Conference on Learning Representations (ICLR)<br><br>**Grants (Reviewer, Meta-Reviewer):** AI4CITIES (public procurement), Climate Change AI Innovation Grants program |
| SUPERVISION EXPERIENCE | **Theses** |

Florian Nachtigall, M.S thesis, 2022
Title: *Predicting building age from urban form at large scale*
Day-to-day supervisor, main supervisor: Felix Creutzig

Andreas Meyer, M.S thesis, 2020–2021
Title: *Building Height Prediction using Convolutional Neural Networks*
Day-to-day supervisor, main supervisor: Felix Creutzig

**Other**

Glenn Pitiot, Internship, 2022(May)–2022(July)

Paul Monat, Internship, 2021(June)–2021(Sep.)

Marvin Bensch, Research Assistant, 2021(Jan.)–2021(June)

Nicolai Hans, Internship, 2020(Feb.)–2020(Aug.)
Currently PhD candidate at Humbold Universität zu Berlin in Statistics
Published together **3.**

SELECTED
PUBLICITY

TU Berlin (in German), press release, *KI hebt Nachhaltigkeitspotenzial im Städtebau*, 2020

MIT Tech Review, article, *Here are 10 ways AI could help fight climate change*, 2019

National Geographic, article, *How artificial intelligence can tackle climate change*, 2019

The Verge, article, *Here's how AI can help fight climate change according to the field's top thinkers*, 2019

MCC Berlin, press release, *Tackling climate change with artificial intelligence*, 2019

COMPUTER SKILLS

Programming languages: `Python` (proficient), `R` (knowledgeable)

High-performance computing: `SLURM` (proficient)

Machine learning software: `Keras`, `Scikit-learn`, `XGBoost` (proficient)

Geographical information software: geospatial `Python` stack, `QGIS` (proficient), `ArcGIS` (knowledgeable)

Databases: `SQL`, `Postgres`, `PostGIS` (knowledgeable)

OTHER
INFORMATION

Spoken languages: English (proficient), French (mother tongue), German (basic)

Citizenship: France

Last updated: November 25, 2022