Nikola Milojevic-Dupont

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 interests

Topics: Climate change mitigation; Urban sustainability, planning & morphology; Buildings; Mobility

Methods: Machine learning; Geographical information system; Energy modelling

Education

Technische Universität Berlin, Berlin, Germany
PhD candidate, 2018–2021 (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

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

Experience

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

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

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

Peer-reviewed publications

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

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

Manuscripts under review

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

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. (2019) Submitted to *ACM Computing Surveys* (by invitation of the editors). Preprint: *arXiv preprint* arXiv:1906.05433

Program organization

International Conference on Learning Representations (ICLR)
Energy day of the Climate Change AI workshop (co-organizer), 2019

Applied Machine Learning Days at EPFL
Climate Change AI track (lead organizer), 2019

Conference presentations

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

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, 2020

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

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

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

Professional service

Climate Change AI
Climate Change AI is a global organization aiming facilitate meaningful work in machine learning for tackling climate change.

Founding member (2019)
Content committee chair (2021–present)
Community lead for buildings and transportation (2020–present)

Reviewer (journal): Applied Energy, Journal of Industrial Ecology, PeerJ Computer Science

Meta-Reviewer (conference): Climate Change AI workshop at the International Conference on Machine Learning (ICML)

Reviewer (conference): 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)

Supervision experience

Theses

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

Other

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

Other information

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

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

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

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

Citizenship: France

Last updated: July 20, 2021