DANIEL BOATENG

Personal Info

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Address:
University of Tübingen |
Department of Geosciences
Schnarrenberg-straße 94-96,
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Skills

Python Programming

HTML

Bash Scripting

Database (eg. MySQL)

C and Fortran

ArcGIS

MATLAB

CSS

JavaScript

React

Professional Summary

Computational scientist and avid problem solver. Research scientist with in-depth knowledge of the physics of the Earth and passionate about exploring new areas of recent technologies such as Machine learning and Artificial Intelligence.

Employment History

Research Associate, University of Tübingen. Tübingen, Baden-Württemberg
Apr. 2021 - Present

Project: REAL-Reconstruction of the eastward propagation of European Alps: Integration of stable isotope paleoaltimetry and paleoclimate modeling (**Advisor: Prof. Todd Ehlers**)

- Climate modeling (Miocene climate simulation and topography sensitivity experiment using ECHAM5-wiso)
- Climate dynamics (Investigation of the evolution of European teleconnections using Empirical Orthogonal Functions and Self-Organizing Maps)
- Proxy system modeling (Bayesian inference)
- Scientific software development (pyESD and pyClimat): Machine learning, Advanced Statistic, Big Data and Visualization

Software Engineer | Research Fellow, Equitech Futures, USA (Remote)
July. 2023 – present

Part of the team working on the measuring carbon platform: measuringcarbon.com

Software Engineer, Holberton School of Programming | ALX-Africa Remote
Aug. 2022 – Aug. 2023

Intensive software engineering training: front-end and back-end development, Unix and Graphic programming, Data Structures, and Algorithms, Reverse engineering and security, and infrastructure design and management

Research Assistant, University of Tübingen, Tübingen, Baden-Württemberg
Nov. 2019 - Mar. 2021

- **Software engineering:** Full-stack design of flight temperature calibration program on Raspberry Pi environment, developed Machine Learning based statistical downscaling of climate information software, visualization, and analysis of large-scale and big climate datasets

Research Assistant, KNUST-College of Engineering, Kumasi
Sep. 2017 - Sep. 2018

Teaching assistant: Applied Geophysics, Geotechnical Engineering, Hydrogeology, and Engineering geology

Research: Assisted 25 undergraduate students in their final year thesis in the Hydrogeology and Geophysics Research Group

Education

University of Tübingen, Tübingen, Baden-Württemberg, Germany
Ph.D., Paleoclimate modeling and Climate Dynamics,
April 2021 - Present

University of Tübingen, Tübingen, Baden-Württemberg, Germany
Master of Science, Applied and Environmental Geoscience (Sehr Gut: First Class),
October 2018 – February 2021

Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
Bachelor of Science, Geological Engineering (First Class),
October 2013 - June 2017

Leadership

1. Ph.D. and Postdoc representative | Department of Geosciences | University of Tübingen (November 2022 - present)
2. Member of Student's Council | Department of Geosciences | University of Tübingen (April 2019 – April 2020)
3. Organizing Committee Head| College of Engineering | KNUST (September 2016 - June 2017)
4. Organizing Secretary | Geological Engineering | KNUST (September 2015 - June 2016)

Publications

Research article (Peer reviewed)

1. Botsyun, S., Ehlers, T. A., Koptev, A., Böhme, M., Methner, K., Risi, C., Stepanek, C., Mutz, S. G., Werner, M., and Boateng, D.: Middle Miocene climate and stable oxygen isotopes in Europe based on numerical modeling, Paleoceanography and Paleoclimatology, 37, 2022.

2. Boateng, D., Mutz, S. G., Ballian, A., Meijers, M. J., Methner, K., Botsyun, S., Mulch, A., and Ehlers, T. A.: The effects of diachronous surface uplift of the European Alps on regional climate and the oxygen isotopic composition of precipitation, Earth System Dynamics Discussions, 1–45, 2022.

3. Boateng, D. and Mutz, S. G.: pyESDv1. 0.1: An open-source Python framework for empirical-statistical downscaling of climate information, Geoscientific Model Development Discussions, 2023, 1–58, 2023.

Conference abstracts

1. Arthur, F., Boateng, D., and Baidu, M.:The evolution of African monsoons and its impacts on precipitation seasonality in the late Cenozoic and future climate change,2023 (AGU22).
2. Arthur, F., Boateng, D., and Baidu, M.: Prediction of Rainfall Response to the 21st-century Climate Change in Ghana using Machine Learning Empirical Statistical Downscaling, 2022, H25A-04, 2022 (AGU22).
3. Boateng, D., Mutz, S. G., and Ehlers, T. A.: How would the eastward propagation of surface uplift in the Alps affect regional climate and isotopic composition of precipitation?, (EGU22).
4. Boateng, D., Mutz, S. G., and Ehlers, T. A.: The influence of North Atlantic Oscillation on oxygen and hydrogen stable isotopes in precipitation of the Late Cenozoic: implications on paleoenvironment reconstructions, (EGU23).
5. Mutz, S. G. and Boateng, D.: pyESD: An open-source Python framework for empirical-statistical downscaling of climate information, Copernicus Meetings, (EGU23).
6. Mutz, S. G., Boateng, D., and Mohadjer, S.: INTEGRATE: A higher-education teaching package for climate science, (EGU22).
7. Sedhu-Madhavan, A., Mutz, S. G., Boateng, D., and Ehlers, T. A.: A model-based exploration of mid-Holocene anti-phase climate variations in the Central Andes, (EGU23).

Accomplishments

1. Machine learning in weather and climate (MOOC by ECMWF) (April 2023)
2. LinkedEarth PaleoHackathon, Virtual Python Workshop (2022)
3. Structuring research article (University of Tübingen, Germany) (September 2021)
4. Summer school on effective High-Performance Computing (HPC) for Climate and Weather (August 2021)
5. From Machine Learning to Deep Learning: a concise introduction - HLRS Stuttgart (June 2021)
6. The Data Science Course 2022: Complete Data Science Bootcamp @Udemy (February 2022)
7. The theory of Deep Learning - Deep Neural Networks 2021 @ Udemy (June 2021)