# RUTH SCHMIDT, PHD

**AI Advisor & Interdisciplinary Researcher**

*My ambition is to co-create trustworthy AI solutions for climate challenges through interdisciplinary approaches. With my passion and drive, I strive to mentor and inspire others to become agents of change, with a particular focus on underrepresented communities. My ethics center around inclusion, social, and environmental justice.*

With over a decade of global experience in finding sustainable solutions in agriculture, food security, financial security, and climate change, I bring expertise in computational and AI methodologies. Holding a PhD in Microbial Ecology, I've led transdisciplinary research projects, employing advanced computational techniques to address pressing environmental challenges. Proficient in communication, I've successfully overseen diverse teams, and fostered effective collaborations with a wide range of stakeholders. Currently leading AI projects for the global initiative "FAIR Forward - AI for all", my focus lies in democratizing AI, cultivating multi-stakeholder partnerships, and developing SDG-relevant projects for climate resilience in various countries in the Global South, including Indonesia, India, Ghana, Côte d'Ivoire, Kenya, Rwanda, Uganda, and South Africa.

## PROFESSIONAL EXPERIENCE

12/2021 | present

**AI Advisor (Fair Forward)**
GIZ (German Agency for International Cooperation) — Bonn, Germany

- Leading the development of impactful, open AI training datasets, models, and SDG-centric AI applications in eight countries with a focus on NLP, agriculture, forestry, energy, and climate.
- Collaborating with and advising partners from various sectors including private sector, universities, civil society, and government bodies to facilitate the creation of open AI resources as public goods. This includes global initiatives like the Lacuna Fund for Climate.
- Providing guidance on AI policy frameworks including ethics, responsible AI, and data governance.
- Developing and managing partnerships with global and regional actors in the AI ecosystem.
- Coordinating diverse teams and mentoring students in AI for Climate action.

02/2021 | 11/2021

**Data Scientist**
Nextgem — Utrecht, The Netherlands

- Developed "Fectfinder", an AI-based tool for detecting financial economic crimes (FEC), aligning with SDG 16.
- Implemented a marketing strategy for the newly established company focused on FEC prevention.

01/2020 | 10/2020

**Data Scientist**
Plotly Technologies — Montréal, Canada

- Contributed to the development and improvement of two Bioinformatics Dash applications.
- Showcased Dash apps to the open-source community at the Bioconductor Conference 2020.

06/2019 | 10/2021

**Environmental Analyst**
IUCN and IFAD — Global

- Analyzed data and authored reports for IUCN's Common ground report, informing global policy on soil biodiversity, climate change, and biodiversity loss.
- Conducted a benchmarking study for IFAD Strategy on Biodiversity 2022-2025.

## CONTACT INFO


Berlin, Germany
ruth.schmidt@giz.de
linkedin.com/ruth-schmidt
FAIR Forward
scholar.google.com


## STRENGTHS

Artificial Intelligence, Machine Learning, Data Science techniques, Remote Sensing and GIS
Climate science, Environmental systems, and Ecological dynamics
Strong problem-solving abilities and interdisciplinary understanding, leadership and team management skills
Excellent communication and collaboration skills, ethical awareness, creative and innovative

## CODING SKILLS

R programming, Python, SQL, CSS & HTML, Git, Docker, Plotly Dash

## LANGUAGES

German (Native)
English (Fluent)
Spanish (Intermediate)

## ACADEMIC EXPERIENCE

01/2020 | 03/2020

**JAMSTEC Research Fellow**
Kochi Core Center — Kochi, Japan
- Analyzed genetic data from microorganisms in extreme environments to understand their functions and interactions.
- Created a quicker and more precise way to detect chemical compounds produced by these bacteria.

02/2018 | 12/2019

**Mitacs Postdoctoral Fellow**
Institut national de la recherche scientifique (INRS) — Montréal, Canada
- Led three interdisciplinary studies on crop responses to drought, identifying innovative strategies for climate-resilient agriculture.
- Analyzed complex genetic data to study climate fluctuations' impacts on agriculture.
- Mentored three doctoral and two master's students.

02/2013 | 10/2017

**PhD Candidate**
Wageningen University & Netherlands Institute of Ecology (NIOO) — Wageningen, The Netherlands
- Investigated the molecular mechanisms underlying soil microbe interactions using genetic and computational methods, informing climate-resilient agriculture strategies. Thesis: Volatile communication between fungi and bacteria.
- Collaborated with research institutes in the US, Germany, Egypt and Sweden on agricultural and climate adaptation projects.
- Mentored four undergraduate and one graduate student.

## EDUCATION

10/2017

**PhD in Microbial Ecology**
Wageningen University & Netherlands Institute of Ecology (NIOO) — Wageningen, The Netherlands

12/2012

**Master of Science in Biotechnology**
Graz University of Technology — Graz, Austria

09/2010

**Bachelor of Science in Molecular Biology**
Graz University of Technology — Graz, Austria

## RELEVANT ARTICLES

- High Carbon Stock Approach: Mapping Forests to Combat Climate Change and Protect Livelihoods in Indonesia
- Discover Indonesia's linguistic diversity: FAIR Forward and Prosa.ai on the road to inclusive AI technology
- Restoring Forests in Côte d'Ivoire: The African Biomass Challenge
- How AI helps Kenyan small-holder farmers to adapt to climate change
- Using AI & Machine Learning for Precision Agriculture in South Africa
- Machine Learning for Earth Observation — What about Ethics?