

RUTH SCHMIDT, PHD

Data Scientist

Technical Acumen | Statistics | Data visualization | Reproducibility

8+ years of global experience managing, analysing, visualizing and sharing research data. Completed PhD in Microbial Ecology and have extensive experience in transdisciplinary research, data analysis, scientific writing, and project management. Skilled in exploring data and turning them into accessible information. Adept at communicating and presenting complex data and science concepts to scientific and non-scientific audiences. Managed six projects featuring staff with diverse backgrounds and skills.

Selected Highlights

- **Developed two new Dashboards at Plotly Technologies that provided insights into using microbial genes as a solution to drought in agriculture by employing various statistical and machine-learning techniques** (e.g., network analysis, clustering, dimensionality reduction, linear regression).
- **Established reproducible computational framework at INRS (Institut national de la recherche scientifique) to quantify genes and transcripts in genetic-related data.** This workflow helped to quantify and compare abundance levels of microbial communities in different environmental conditions.
- **Published easy-to-understand data science blog** for non-scientific audiences, titled "How to Give Life to Your Microbiome Data" (available [here](#)).

PROFESSIONAL EXPERIENCE

02/2021
|
present

Data Scientist

Nextgem

📍 Utrecht, The Netherlands

- Developing AI-based tool for financial economic crime (FEC) detection.
- Implemented marketing strategy for newly started company [Fectfinder](#) for FEC prevention.

10/2020
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present

Freelance Data/Policy Analyst

DataMoves

📍 Global

- Developed benchmarking study for IFAD's (International Fund for Agricultural Development) biodiversity strategy.
- Created interactive visualizations of COVID-19 data for the Economics Observatory.
- Conducted multivariate analysis of biodiversity data for Louis Bolk Instituut.

01/2020
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10/2020

Data Scientist

Plotly Technologies

📍 Montréal, Canada

- Developed two brand-new open-source Dash apps for molecular data from microbiome research. These tools offered a way to integrate genetics-related big data in a visually informative way.
- Utilized company's Dash R and Dash Bio libraries to create the interactive applications within four months.
- Presented workflow and examples of Dash apps to the open-source community at the Bioconductor Conference 2020 ([link to slides](#)).

06/2019
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10/2019

Environmental Consultant

IUCN

📍 Remote

- Performed data analysis and report writing for IUCN's Common ground report on how soil and landscape biodiversity can benefit society and help overcome major challenges of climate change, biodiversity loss, and food and water insecurity.

CONTACT INFO

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in linkedin.com/ruth-schmidt

🐙 github.com/ruthlys

KEY STRENGTHS

📊 Multivariate Statistics,
Statistical Models, Machine
Learning
🔬 Microbiome Research,
Bioinformatic & Omic Tools
🔧 Data Cleaning, Processing,
Archiving, Mining & Manipulation
👤 Innovative, Creative, Curious,
Goal/Solution-oriented,
Empowering leader, Excellent
multilingual communication skills,
Knowledgeable collaborator,
Decision maker, Organizer,
Critical thinker

TECHNICAL SKILLS

💻 R programming, Python, SQL,
CSS & HTML, Git/Github, Power
BI, Plotly Dash and graphing
libraries

LANGUAGES

German (Native)
English (Excellent)
Dutch (Intermediate)
Spanish (Advanced)
French (Beginner)



ACADEMIC EXPERIENCE

01/2020

03/2020

Visiting Research Fellow

Kochi Core Center

📍 Kochi, Japan

- Conducted bioinformatics data analysis.
- Recognized for effectively performing highly targeted genetic analysis.
- Developed a faster, less expensive, and more accurate method of detecting bacterial gaseous compounds under challenging environmental conditions (e.g., deep sea, drought).

02/2018

12/2019

Postdoctoral Fellow

Institut national de la recherche scientifique (INRS)

📍 Montréal, Canada

- Led 3 lab and field studies with wheat under drought conditions.
- Conducted quantitative analysis of genetic-related big data.
- Collaborated with researchers in The Netherlands (Netherlands Institute of Ecology) and the UK (Plymouth Marine Laboratory) on studies.
- Co-supervised four PhD students and two master's degree students.
- Presented findings at six international conferences.

02/2013

10/2017

PhD Candidate

Wageningen University & Netherlands Institute of Ecology

📍 Wageningen, The Netherlands

- Utilized a combination of genetic, microbiological, and analytical approaches to characterize the molecular mechanisms involved in soil microbe interactions.
- Collaborated with five international research institutes and universities in the US (Institute for Genome Sciences, Baltimore); Germany (Greifswald, Jena & Center for Functional Genomics of Microbes, Max-Planck Institute for Chemical Ecology); and Sweden (Swedish University of Agricultural Sciences) on microbiomics projects.
- Mentored four undergraduate and one graduate student on molecular biology research projects.

10/2010-

12/2012

University Assistant

Graz University of Technology

📍 Graz, Austria

- Led and conducted field study on the effect of biocontrol agents in field in Egypt.
- Performed high-quality bioinformatics analysis of data.
- Oversaw three team members.



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