EMILIO BERTI

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SUMMARY

I am a theoretical ecologist with a passion for math and computing. I have an strong quantitative background, with expertise in mathematical and statistical modelling of complex systems using big databases at large spatio-temporal scales. I have worked in many different fields of biology, from the microscopic scale of muscle physiology to the global scale of vertebrates macroecology. I enjoy programming very much; I started by prototyping robots and I haven't stop since. I have achieved outstanding programming skills in several programming languages, particularly in R, python, and C++. I have a strong background in using Geographic Information Systems (GIS), especially in optimizing large computations or performing complex data analyses.

WORK HISTORY

PostDoctoral researcher *October 2020 – Present*
Theory in Biodiversity Science
German Centre for Integrative Biodiversity Research (iDiv)
Leipzig, Germany

Scientific consultant *May 2020 – July 2020*
Department of Bioscience
Aarhus University
Aarhus, Denmark

Teaching assistant *February 2017 – April 2020*
Department of Biology
Aarhus University
Aarhus, Denmark

EDUCATION

PhD *February 2017 – June 2020*
Section of Ecoinformatics and Biodiversity
Department of Biology
Aarhus University
Aarhus, Denmark

Visiting PhD student *Fall 2018*
Department of Ecology and Evolution
University of Chicago
Chicago, IL

MSc in Biology *2013 – 2016*
Department of Ecology and Evolution

University of Florence
Florence, Italy

BSc in Biology *2009 – 2012*
Department of Physiology
University of Florence
Florence, Italy

POSTGRADUATE COURSES

"Species Distributions Modelling" *2019*
Evora, Portugal – Lecturers: Prof. Miguel Araújo and Dr. Babak Naimi
"Megafauna ecology – shaping past, present and future ecosystems." *2019*
Aarhus, Denmark
"Mixed models" *2019*
Aarhus, Denmark – Lecturer: Prof. Rodrigo Labouriau
"Writing and Speaking Science in English for Biology Students" *2019*
Aarhus, Denmark – Lecturer: Prof. Brian Sorrell
"Ecosystem roles of megafauna in the past, present, and future" *2017*
Aarhus, Denmark
"Mediterranean School of Complex Networks (MSCx)" *2017*
Salina, Italy

SKILLS

Language
Italian (native), English (fluent), Danish (beginner)
Programming
R (expert), bash (expert), python (proficient), C/C++ (proficient), javascript (mostly for Google Earth Engine, beginner), julia (beginner), SQL (postgres falvor, proficient), html (beginner)
Software
Linux/GNU, Rstudio, Anaconda, Jupyter, QGIS, LaTeX, Markdown, Pandoc, Git, GitHub, Overleaf
Methods
Statistics, regression analysis, effect sizes, mixed models, variables selection, PCA, ordination and classification, optimization, machine learning, network analysis, mathematical modelling, extrapolation and forecasting, species distribution models, environmental niche modeling, spatial modeling, geographic information systems (GIS), demographic projections, quantitative genetic, big data, data visualization, data science, APIs, automation.

TEACHING & ORGANIZED WORKSHOPS

Teaching
Introduction to git and GitHub for a fool-proof programming (2022) – course
Introduction to scientific programming and tidyverse (2022) – slides
Teaching Assistant
Meta-analyses for Biodiversity (2021)
Statistical and Geospatial Modelling (2019)
Behavioural Biology (2018, 2019)
Geographic Information System (2017)
Organized Workshops
"Cleaning online repository data for use in biogeography and macroecology" (2019)
"Running a species distribution model in R." (2019)
"A (very) gentle introduction to Linux." (2019)

PUBLICATIONS

Bauer, B., **Berti, E.**, ... & Brose, U. (2022). Biotic filtering by species' interactions constrains food-web variability across spatial and abiotic gradients. *Ecology letters*. DOI: 10.1111/ele.13995. (`Shared first authorship`).

Grenié, M, **Berti, E.**, ... & Marten, W. (2022). Harmonizing taxon names in biodiversity data: a review of tools, databases, and best practices. *Methods in Ecology and Evolution*. DOI: 10.1111/2041-210X.13802.

Berti, E., Davoli, M., ... & Vollrath, F. (2021). The r package enerscape: A general energy landscape framework for terrestrial movement ecology. *Methods in Ecology and Evolution*. DOI: 10.1111/2041-210X.13734.

Berti, E., Monsarrat, S., Munk, M., Jarvie, S. & Svenning, J.C. (2020). Body size is a good proxy for vertebrate charisma. *Biological Conservation*. DOI: 10.1016/j.biocon.2020.108790.

Berti, E. & Svenning, J.C. (2020). Megafauna extinctions have reduced biotic connectivity worldwide. *Global Ecology and Biogeography*. DOI: 10.1111/geb.13182.

PEER REVIEW

As of July 2022, I have done five peer reviews for: Ecography (2), Ecology Letters (2) and GigaScience (1). You can find more at my Publons profile.

LINKS

- Google Scholar profile
- Personal website
- ORCiD
- LinkedIn
- GitHub
- Publons