Francisco Richter
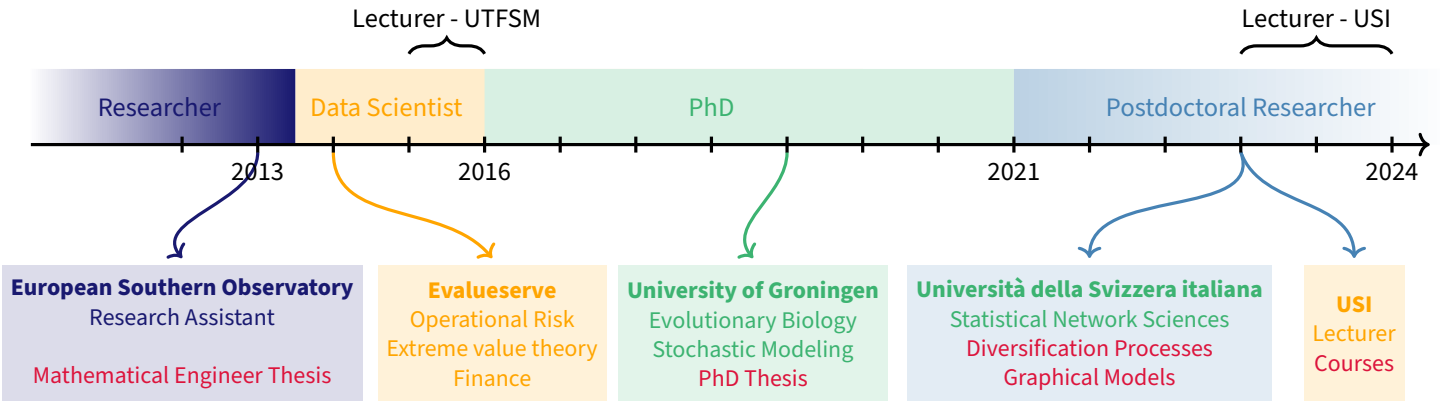
✉ richtf@usi.ch | ⌂ franciscorichter.github.io | ⊙ github.com/franciscorichter | ▦ linkedin.com/in/franciscorichter

Education

PhD *Groningen, The Netherlands*

University of Groningen *2016-2021*

- Bioinformatics, Computational biology
- Evolutionary biology, Diversification processes
- **Thesis:** Inferring the drivers of species diversification

Mathematical Engineer *Valparaíso, Chile.*

Universidad Técnica Federico Santa María *2013*

- **Thesis:** Mathematical Modelling Applied to Photometric Correction in Astronomical Observations

Experience

USI Università della Svizzera italiana *Lugano, Switzerland*

Postdoctoral Researcher *2020 - Present*

- Statistical network sciences, biostatistics, and complex systems.
- Developed models for species diversification and phylogenetic inference.
- Investigated microbiome interactions and environmental impacts on species.

Lecturer *2023-present*

- *Probability & Statistics, Bachelor INF*
- *Stochastic Methods, Master IA, CS*
- *Introduction to Differential Equations, Master CS*
- *Social Network Analysis, Master IA*

Evalueserve (`www.evalueserve.com`) *Viña del mar, Chile*

Senior Research Analyst *2013-2015*

- Data Scientist
- Risk Modeling

Universidad Técnica Federico Santa María *Valparaíso, Chile*

Lecturer *2015*

- Matemáticas I

Research Assistant   *2009-2012*
- Development of Artificial Intelligence methods for ALMA observational scheduling

ESO European Southern Observatory   *Santiago, Chile*
Research Associate   *2012 - 2013*
- Mathematical methods on photometric correction for VLT (`http://www.eso.org/public/teles-instr/vlt`).

Publications

RESEARCH ARTICLES

Random graphical model of microbiome interactions in related environments
  Veronica Vinciotti, Ernst C Wit, Francisco Richter
  Journal of Agricultural, Biological and Environmental Statistics (2024) pp. 1–14. Springer, 2024

Detecting phylodiversity-dependent diversification with a general phylogenetic inference framework
  Francisco Richter, Thijs Janzen, Hanno Hildenbrandt, Ernst C Wit, Rampal S Etienne
  bioRxiv (2021) pp. 2021–07. Cold Spring Harbor Laboratory, 2021

Introducing a general class of species diversification models for phylogenetic trees
  Francisco Richter, Bart Haegeman, Rampal S Etienne, Ernst C Wit
  Statistica Neerlandica 74.3 (2020) pp. 261–274. Wiley Online Library, 2020

Stereo 3D cloud motion from tandem satellites
  Yang Zhou, Sophie Abrahams, Francisco Mendoza, Maddalena Donà, Rik Verbiest
  Mathematics in Industry Reports (2024). 2024

Plant diets of land snail community members are similar in composition but differ in richness
  Kasper P Hendriks, Karen Bisschop, James C Kavanagh, Hylke H Kortenbosch, Anaïs EA Larue, Dries Bonte, Elza J Duijm, Joana Falcão
  Salles, Francisco J Richter Mendoza, Menno Schilthuizen
  Journal of Molluscan Studies 87.4 (2021) eyab041. Oxford University Press, 2021

Microbiome and environment explain the absence of correlations between consumers and their diet in Bornean microsnails
  Kasper P. Hendriks, Karen Bisschop, Hylke H. Kortenbosch, James C. Kavanagh, Anaë E. A. Larue, Phung Chee-Chean, Dries Bonte,
  Elza J. Duijm, Joanna Falcão Salles, Alex L. Pigot, Francisco J. Richter Mendoza, Menno Schilthuizen, Martijn J. Anderson, Arjen G. C. L.
  Speksnijder, Rampal S. Etienne
  Ecology 102.2 (2021) e03237. 2021

Fieldwork to sample microsnails for diet and microbiome studies along the Kinabatangan River, Sabah, Malaysian Borneo
  Kasper P Hendriks, Karen Bisschop, James C Kavanagh, Hylke H Kortenbosch, Anaïs EA Larue, FJ Richter Mendoza, Menno Schilthuizen,
  Rampal S Etienne
  Malacologist 72 (2019) pp. 33–38. 2019

CONFERENCE PRESENTATIONS

International Conference on Complex Networks (CompleNet) . Aveiro, Portugal
  Contributed talk: "Detecting Complex Diversity-Dependent Diversification with A Novel Phylogenetic Inference Framework", 2023

World Conference on Natural Resource Modeling, Amsterdam, The Netherlands
  Contributed talk: "Phylodiversity-Dependent Diversification: A General Framework for Investigating the Role of Phylogenetic Diversity in Species Diversification Dynamics", 2023

Conference on Complex Systems 2022. Palma de Mayorca, Spain.
  Contributed talk: Inferring the Drivers of Species Diversification processes, 2022

World Conference on Natural Resource Modeling. Valparaiso, Chile.
  Contributed talk: Including phylodiversity in diversity dependence diversification models, 2020

Conference on Complex Systems 2018, Statistical Validation Methods for Complex Systems. Thessaloniki, Greece.
  Contributed talk: "Generalizing species diversification models, 2018

Mathematics for Planet Earth (MPE) meeting: Statistical methods for dynamical systems. Ultrech, The Netherlands.
  Invited Speaker: A statistical approach to species diversification dynamics, 2018

32nd International Workshop on Statistical Modelling. Groningen, The Netherlands
  Contributed talk: "A general statistical framework to study the diversification of species", 2017

Mathematical Models in Ecology and Evolution. London, UK.
  Contributed talk: "Generalizing species diversification models", 2017

ORGANIZED WORKSHOPS

Sparse Inference on Complex Networks, 26-27 June, 2023. Lugano, Switzerland
  `https://www.ci.inf.usi.ch/workshop-sparse-inference-on-complex-networks`

EDUCATIONAL MEDIA

My PhD thesis explained: How did species evolve?
  `https://www.youtube.com/watch?v=ORwCzOyzBXY`