FRANCISCO RICHTER

SHORT BIO

Francisco is a doctoral student at the Bernoulli Institute for Mathematics, Computer Science and Artificial Intelligence at University of Groningen, under the advisement of Dr. Ernst Wit and Dr. Rampal Etienne. He received his diploma in Mathematical Engineering from the UTFSM in 2013. Before his current position he worked as a data scientist for an international firm on the area of stochastic modeling.

EDUCATION

PhD Candidate *2015-2020*
Johann Bernoulli Institute for Mathematics and Computer Science,
Groningen Institute for Evolutionary Life Sciences,
University of Groningen. The Netherlands.
Project : Simultaneous estimation and selection of species diversification models.

Mathematical Engineer *2013*
Universidad Técnica Federico Santa María, Valparaíso, Chile.
Thesis : Mathematical Modelling Applied to Photometric Correction in Astronomical Observations

Bachelor of Science in Mathematics *2011*
Universidad Técnica Federico Santa María, Valparaíso, Chile.

International Student, Engineering Mathematics Program *2009*
KTH, Royal Technical University of Stockholm, Sweden.

WORK EXPERIENCE

Senior Research Analyst 2013-2015
Evalueserve *Viña del mar, Chile*

Working in a Mathematical Modelling team as Data Scientist, supporting client's operations in the US. Duties include Mathematical Modelling, Data Analytics, Programming, Statistics, Research and Data Sciences applied to Operational Risk field (`http://www.evalueserve.com/`).

Research Associate 2012
European Southern Observatory (ESO) *Santiago, Chile*

Design of mathematical methods on photometric correction for the world's most advanced optical telescope, VLT (`http://www.eso.org/public/teles-instr/vlt`).

Research Assistant 2009-2012
Universidad Tecnica Federico Santa Maria *Valparaíso, Chile*

Develop Artificial Intelligence tools for astronomical applications. (`https://csrg.inf.utfsm.cl/twiki/bin/view/LIRAE/WebHome`).

Summer Internship Summer 2012
European Southern Observatory (ESO) *Paranal Observatory, Cerro Paranal, Chile*

Develop Artificial Intelligence tools (fuzzy logic) with mathematical knowledge (Markov process) applied to log analysis for VLT telescopes.

Summer Internship Summer 2011
Universidad Valparaiso, Physics and Astronomy Department *Valparaíso, Chile*

Develop Numerical analysis tools for meteorological analysis in astronomy.

TEACHING EXPERIENCE

- **Lecturer** on Calculus courses for engineering core curriculum, Universidad Técnica Federico Santa María, 2015
- **Teacher: Data Science Program (DSP)** on Statistics and R modules, Evalueserve, 2013-2014
  - Leading the R (statistical software) module.
  - Conducting lessons.
  - Developing course materials related to statistical knowledge.
- **Teacher: Analytics Carrier Path (ACP)** on statistical modules, Evalueserve, 2013
  - Conducting lessons.
  - Developing course materials (Statistics).
- **Teacher Assistant** of Mathematical courses, Universidad Técnica Federica Santa María, 2006-2012. Courses includes: Mathematical modeling, Analysis, Statistics, Calculus and standard math courses.

CONFERENCE TALKS

- World Conference on Natural Resource Modeling, Valparaiso, Chile. Contributed talk: Including phylodiversity in diversity dependence diversification models", Jan. 2020.
- 2018 Conference on Complex Systems, Statistical Validation Methods for Complex Systems, Thessaloniki, Greece. Contributed talk: Generalizing species diversification models", Sept. 2018.
- Mathematics for Planet Earth (MPE) meeting: Statistical methods for dynamical systems, Ultrech, The Netherlands. Invited Speaker: "A statistical approach to species diversification dynamics", March 2018.
- Mathematical Models in Ecology and Evolution, London, UK. Contributed talk: "Generalizing species diversification models", July 2017.
- 32nd International Workshop on Statistical Modelling, Groningen, NL. Contributed talk: "A general statistical framework to study the diversification of species", July 2017.

PUBLICATIONS

- **Richter, F.**, Haegeman, B., Etienne, R. S., & Wit, E. C (2020). *Introducing a general class of species diversification models for phylogenetic trees.* Statistica Neerlandica. .
- Hendriks, K. P., Bisschop, K., Kavanagh, J. C., Kortenbosch, H. H., Larue, A. E., Mendoza, **F. J. Richter**., ... & Etienne, R. S. (2019) *Fieldwork to sample microsnails for diet and microbiome studies along the Kinabatangan River, Sabah, Malaysian Borneo.*
- **Francisco Richter**, Rampal Etienne, Ernst Wit (2017). *A general statistical framework to study the diversification of species.* Proceedings of the 32nd International Workshop on Statistical Modelling, vol. I, pp. 339-334.
- Gregorio. R, **Richter. F**, Hoffstadt. A, and Solar M. (2011) *A tabu search approach to ALMAs array scheduling problem.* Technical Report, Departamento de Informática, Universidad Técnica Federico Santa María, 2011.