



Iker Rivas-González

PhD student at Aarhus University

PhD student in bioinformatics with experience in evolutionary and population genetics, data science and programming

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EDUCATION

PhD in Bioinformatics

Bioinformatics Research Centre, Aarhus University (Denmark)

Supervised by Mikkel Heide Schierup

Feb 2020 – present

- Analyses of full genomes: primates, birds and marsupials.
- Phylogenetic reconstruction, selection, recombination.
- Mathematical modelling: hidden Markov models in population genetics.
- Data visualization.

MSc in Bioinformatics

Aarhus University (Denmark)

Aug 2018 – Jun 2021

- Advanced genomics, big data analysis, data science, algorithmic engineering.

Erasmus exchange student

Aarhus University (Denmark)

Aug 2017 – Jun 2018

- Erasmus scholarship, Basque Government scholarship, Kutxabank scholarship.
- Advanced molecular biology courses.

BSc in Biochemistry and Molecular Biology

University of the Basque Country (Spain)

Sep 2014 – Jun 2018

- With honors, extraordinary prize, best academic record of 2018.
- Protein engineering, biotechnology, physiology, metabolism.

WORK AND TEACHING EXPERIENCE

Project: method development for modeling the evolutionary history of species

Nov 2021 – present

- Developed a sequentially Markovian coalescent (SMC) to model the speciation process through incomplete lineage sorting (ILS).

Project: analysis of genome-wide data

Feb 2020 – present

- Analyzed the ILS in the genomes of 50 primates, 250 birds and 6 marsupials.
- Reconstructed the phylogeny of these species, successfully solving challenging nodes within the tree of life.
- Investigated the interplay between selection, recombination and ILS.

Software development in R

Nov 2020 – present

- [PhaseTypeR](#): phase-type distributions in R, available on CRAN.
- [ggHoriPlot](#): horizon plots in ggplot2, available on CRAN.

Teaching assistant, Aarhus University (Denmark)

- Data Science in Bioinformatics (Fall of 2020 and 2021).
- Statistical and Machine Learning in Bioinformatics (Spring of 2020, 2021 and 2022).

SELECTED PUBLICATIONS

- **Iker Rivas-González**, Marjolaine Rousselle, Fang Li, Long Zhou, Julien Y. Dutheil, Kasper Munch, Yong Shao, Dongdong Wu, Mikkel H. Schierup and Guojie Zhang (2021). Pervasive incomplete lineage sorting illuminates speciation and selection processes in primates. *Science* (under review).
- **Iker Rivas-González**, Lars Nørvang Andersen and Asger Hobolth (2022). PhaseTypeR: phase-type distributions in R with reward transformations and a view towards population genetics. *Journal of Statistical Software* (under review).
- Shaohong Feng, Ming Bai, **Iker Rivas-González**, ..., Mikkel H. Schierup and Guojie Zhang (2022). Incomplete lineage sorting and phenotypic evolution in marsupials. *Cell*;185(10):1646-1660.e18. doi:[10.1016/j.cell.2022.03.034](https://doi.org/10.1016/j.cell.2022.03.034).

ATTENDED MEETINGS

- **The Biology of Genomes** (Cold Spring Harbor Laboratory, NY, USA) – Talk
- **Probabilistic Modelling in Genomics 2022** (Oxford, UK) – Talk
- **Three Minute Thesis Competition** finalist (Aarhus, DK) – Talk
- **6th Annual Danish Bioinformatics Conference 2021** (Aalborg, DK) – Poster
- **SMBE Meeting 2021** (virtual) – Poster

TECHNICAL SKILLS

● ● ● ● ● R
● ● ● ● ● Python
● ● ● ● ○ LaTeX
● ● ● ○ ○ Bash

LANGUAGE SKILLS

● ● ● ● ● English
Full professional proficiency

● ● ● ● ● Spanish
Native

● ● ● ● ● Basque
Full professional proficiency

● ● ● ● ○ Danish
Limited working proficiency

● ● ○ ○ ○ German
Elementary proficiency

SOFT SKILLS

- Leadership, teamwork, critical thinking
- Resilient, motivated, empathetic, cheerful
- Excellent written and verbal communication skills

INTERESTS

- Graphic design
- Music production
- Vegetarian cuisine
- Basque folk dances
- Board games