Juniper Tyree
Doctoral Researcher
Institute for Atmospheric and Earth System Research (INAR)
Doctoral Programme in Atmospheric Sciences
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Research interests

Protecting our planet and the incredible species we share it with are very close to my heart. I am, therefore, very passionate about utilising computer science to solve these global problems.
My research is focused on fearless lossy compression for weather and climate science. I also work on reproducible computing for scientific collaboration and outreach.

Qualifications

Theoretical and Computational Methods, Master of Science, Prudent Response Surface Models: Exploring a Framework for Approximating Simulations with Confidence and Certainty, University of Helsinki
1 Aug 2021 → 12 May 2023
Award Date: 12 May 2023

Computing, Master of Engineering, Communication-free and Parallel Simulation of Neutral Biodiversity Models, Imperial College London
30 Sept 2017 → 25 Jun 2021
Award Date: 1 Aug 2021

Employment

Doctoral Researcher
Institute for Atmospheric and Earth System Research (INAR)
University of Helsinki
Finland
1 May 2023 → present

Doctoral Researcher, Doctoral Programme in Atmospheric Sciences
University of Helsinki
Finland
4 Sept 2023 → present

Master Trainee
EMBL European Bioinformatics Institute (EBI)
United Kingdom
1 Apr 2020 → 1 Sept 2020

Undergraduate Teaching Assistant
Imperial College London
London, United Kingdom
1 Oct 2019 → 1 Mar 2020

Undergraduate Research Opportunity
Imperial College London
London, United Kingdom
1 Aug 2019 → 1 Sept 2019

Projects

ESiWACE3
Järvinen, H. (Project manager) & Tyree, J. (Participant)
European Commision Joint Research Centre
01/01/2023 → 31/12/2026

Publications

Modelling the impact of anthropogenic aerosols on CCN concentrations over a rural boreal forest environment
Clusius, P. S., Baykara, M., Xavier, C., Zhou, P., Tyree, J., Foreback, B., Äijälä, M., Graeffe, F. E. F., Petäjä, T., Paasonen, P., Kumala, M., Palmer, P. I. & Boy, M., 28 Jan 2025, (Submitted) In: Atmospheric Chemistry and Physics.

iplot: Web-First Visualisation Platform for Multidimensional Data
Tanaka, A., Tyree, J., Björklund, A., Mäkelä, J. S. & Puolamäki, K., 2023, *Machine Learning and Knowledge Discovery in Databases: Applied Data Science and Demo Track: European Conference, ECML PKDD 2023, Turin, Italy, September 18–22, 2023, Proceedings, Part VII*. Cham: Springer, p. 335-339 5 p. (Lecture Notes in Computer Science; vol. 14175, no. 1).

A decoupled, modular and scriptable architecture for tools to curate data platforms
Tyree, J., Hermjakob, H. & Llinares, M. B., Oct 2021, In: Bioinformatics. 37, 20, p. 3693–3694 2 p.

Communication-free and Parallel Simulation of Neutral Biodiversity Models
Tyree, J., 12 Aug 2021.

Theses

Tyree, J. (2023) *Prudent Response Surface Models: Exploring a Framework for Approximating Simulations with Confidence and Certainty*. Master's Thesis. Available from: http://urn.fi/URN:NBN:fi:hulib-202305151941.

Tyree, J. (2021) *Communication-free and Parallel Simulation of Neutral Biodiversity Models*. Master's Thesis. Available from: https://doi.org/10.48550/arXiv.2108.05815.

Datasets

The SOSAA Trajectories Dataset
Tyree, J. (Creator) & Clusius, P. S. (Contributor), Zenodo, 26 Apr 2023
DOI: 10.5281/zenodo.7867138, https://github.com/juntyr/sosaa-trajectories-dataset