Felix Strnad

Curriculum Vitae

Qualification

University

Sep 2020 – ongoing

PhD Student, *Cluster of Excellence "Machine Learning", University of Tübingen*, Tübingen, Machine Learning in Climate Science group.
Supervisors: Dr. Bedartha Goswami, Prof. Dr. Ulrike von Luxburg.

Guest Scientist, *Potsdam Institute for Climate Impact Research (PIK)*, Potsdam, Artificial Intelligence in the Anthropocene group.
Supervisor: Prof. Dr. Niklas Boers.

Visiting Scientist, *University of Birmingham, Jun 2020 – Sep 2020*, Birmingham, Earth Science Department.
Supervisor: Dr. Ruth Geen

May 2017 – Dec 2019

Master of Science (M.Sc.) in Physics of Complex Systems, *Georg-August-Universität*, Göttingen.
Grade: *1.0* ("Very Good, With distinction")

Masterthesis in Physics, *Potsdam Institute for Climate Impact Research (PIK)*, Potsdam.
Title: Deep Reinforcement Learning for Keeping Complex Systems in Desired States, Applied to Stylized World-Earth Models and Planetary Boundaries.

Sep 2013 – Apr 2017

Bachelor of Science (B.Sc.) in Physics, *Georg-August-Universität*, Göttingen, Grade: *1.6* ("Good, With distinction").

Bachelorthesis in Physics, *Institute for Microbiology and Genetics*, Göttingen.
Title: Computationally efficient prediction of SAXS patterns from Molecular Dynamics Simulations.

ERASMUS exchange program Sep 2015 – Aug 2016, *Università degli Studi, Dipartimento di Fisica Enrico Fermi*, Pisa.

High School

Jul 2012

High-school degree, *Albertus-Magnus-Gymnasium*, Ettlingen (Baden-Würtemberg).
Grade: *1.2* ("Very Good")

Publications

2022   *Teleconnection patterns of different El Niño types revealed by climate network curvature.* **Felix M. Strnad**; Jakob Schlör; Christian Fröhlich; Bedartha Goswami. *Geophysical Research Letters*

2022   *Physically Constrained Generative Adversarial Networks for Improving simulated Precipitation from Earth System Models.* Philipp Hess; Markus Drüke; Stefan Petri; **Felix Strnad**; Niklas Boers. *Nature Machine Intelligence*

2019   *Deep reinforcement learning in World-Earth system models to discover sustainable management strategies.* **Felix M. Strnad**; Wolfram Barfuss; Jonathan F. Donges; Jobst Heitzig. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 29:123122. doi:10.1063/1.5124673.

2019   *Combined small-angle X-ray and neutron scattering restraints in molecular dynamics simulations.* Chen, Po-chia; Shevchuk, Roman; **Strnad, Felix. M.**; Lorenz, Charlotte; Karge, L.; Gilles, R.; Stadler, A.; Hennig, J.; Hub, Jochen. S. *Journal of chemical theory and computation, ACS Publications*

2018   *Merging in-solution X-ray and neutron scattering data allows fine structural analysis of membrane-protein detergent complexes.* Dias Mirandela, G.; Tamburrino, G.; Ivanović, Milos. T.; **Strnad, Felix. M.**; Byron, O.; Rasmussen, T.; Hoskisson, P. A.; Hub, Jochen. S.; Zachariae, U.; Gabel, F. & Javelle, A. *The Journal of Physical Chemistry Letters*

Practical Experience

Dec 2019 – Sep 2020   **Research Scientist**, *Potsdam Institute for Climate Impact Research*, Potsdam. Real Estimate Climate Asset Mapping Project (RECAM). Derivation of climate indices from historical data and climate simulation.

May 2019 – Dec 2019   **Research Assistant**, *Potsdam Institute for Climate Impact Research*, Potsdam. Software developer for the PyUnicorn package.

Feb 2019 – May 2019   **Research Assistant**, *Potsdam Institute for Climate Impact Research*, Potsdam. Webdeveloper for the website Klimafolgenonline.de.

Mar 2018 – Aug 2018   **Research Assistant**, *Georg-August-Universität Göttingen, Faculty of Physics*. Tutor for Experimental Physics II (Electrodynamics). Student's rating 6.5 of 7

Oct 2017 – Mar 2018   **Research Assistant**, *Georg-August-Universität Göttingen, Faculty of Physics*. Tutor for Experimental Physics III (Optics and Waves). Student's rating 5.3 of 7

Jun 2017– Aug 2018   **Research Assistant**, *Georg-August-Universität Göttingen, Institute for Microbiology and Genetics*, Computational Molecular Biophysics Group. Expansion of the bachelor thesis

Mar 2017 – Oct 2017   **Research Assistant**, *Georg-August-Universität Göttingen, Faculty of Physics*. Tutor for Analytical Mechanics. Student's rating: 5.9 of 7

Oct 2016 – Mar 2017   **Research Assistant**, *Georg-August-Universität Göttingen, Faculty of Physics*. Tutor for Experimental Physics I (Classical Mechanics). Student's rating: 5.7 of 7

Aug 2012 – Aug 2013   **International Youth Civil Service**, *Protestant Church of Germany (Ekiba)*, Pachino (Sicily/Italy). Civil service in the local church community. Work with children and janitorial services

Conferences and Summer Schools

21/05/2022 – 27/05/2022   **EGU General Assembly**, *Vienna*.

19/04/2021 – 30/04/2021   **EGU General Assembly**, *Vienna*.

04/05/2020 – 08/05/2021   **EGU General Assembly**, *Vienna*.

08/19/2019 – 08/30/2019   **Deep Learning Summerschool**, *Berlin Mathematical School (BMS)*, Berlin.

07/01/2019 – 07/06/2019   **Eastern European Machine Learning (EEML) Summerschool**, *Politehnica University of Bucharest*, Bucharest.

03/31/2019 – 04/05/2019   **DPG Spring Meeting**, *Deutsche Physikalische Gesellschaft*, Regensburg. Poster Presentation.

IT Skills

Operating systems	Linux, Macintosh
Version Control	Git
Python	Expert knowledge
C/C++	Advanced knowledge with experience in MPI and OpenMP parallelization
Cuda	Advanced knowledge
Java	Advanced knowledge
JavaScript	Basic knowledge
Shell	Basic knowledge
Matlab	Basic knowledge

Language Skills

Native	German
fluent	English (C1), Italian (C1)
Basic	French (A2)

Awards

- E-fellows.net – Stipend for outstanding scholastic achievements

Activities and Interests

- C3-Conductor course, Music Academy Staufen, Qualification for conductor of wind orchestra. Grade *"Good success"*.
- 1st price with 21 points at the competetion Jugend Musiziert, 02/18/2012 in Philippsburg, category traverse flute solo, age class VI