

Jonas Glombitza



Contact

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Interests

Deep learning, statistics, generative models, astroparticle physics

Skills

Computing:

Python, LaTeX, Git

Libraries:

Keras, TensorFlow, NumPy, Matplotlib, ROOT, docker

Languages:

German, English (fluent), French (elementary)

Interpersonal:

Management, mentoring, flexibility, organization, knowledge sharing

Summary

Postdoc at RWTH Aachen University researching ultra-high energy cosmic rays and the application of deep learning in particle physics. Experienced in several programming language (mainly Python, former C++). Well experienced in numerous libraries including Keras, TensorFlow, NumPy, and Matplotlib. Strong background in machine learning and deep learning (CNNs, RNNs, GANs, and graph networks), cosmic-ray physics, statistics, teaching, and self-organization. Leader of the machine learning group in the Pierre Auger Collaboration.

Experience

Research assistant – since 11/2017

- Developed and deployed a deep-learning-based algorithm to determine the mass composition of ultra-high energy cosmic rays.
- Researched generative models to accelerate physics simulations.
- Researched adversarial frameworks for domain adaption.
- Yearly lecturing for the course: ‘Deep Learning in Physics Research’ at RWTH Aachen University’ (≈120 students).
- Hold international tutorials and lectures to educate students in machine learning.
- Co-supervision of various bachelor and master students.
- Organization of workshops and group meetings.

Internship at DESY - summer 2016

- Simulation study of detector backgrounds for future linear colliders.

Tutoring - 10/2012 to 10/2015

- Student assistant and assistant for various lab courses.

Education

Doctor of Philosophy, Physics, RWTH Aachen University - 2017 to 2021

Grade: summa cum laude

Thesis: ‘*Deep-Learning based Measurement of the Mass Composition of Ultrahigh Energy Cosmic Rays using the Surface Detector at the Pierre Auger Observatory*’

Master of Science, Physics, RWTH Aachen University - 2015 to 2017

Grade: 1,2 (with honors)

Thesis: ‘*A Deep Learning-Based Reconstruction of Air Showers at the Pierre Auger Observatory*’

Bachelor of Science, Physics, RWTH Aachen University - 2012 to 2015

Grade: 1,8

Publications and conference contributions

Author of various peer-reviewed publications. Coauthor of the book ‘Deep Learning for Physics Research’. See full publication list at [Google Scholar](https://scholar.google.com/citations?user=...). Find a summary of conference contributions and invited lectures at www.jonas-glombitza.com/talks.