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LinkedIn
GitHub

HENRIK JESSEN MUNCH

PHD, CAND. SCIENT.

PROGRAMMING

EXPERT

- `Python` (pandas, scikit-learn, pytorch, matplotlib, numpy)
- `Git`
- `Linux` (Arch, Debian)
- `Mathematica`

INTERMEDIATE

- `Rust`
- `Bash`
- `Julia`
- `Lua`

SKILLS

DATA SCIENCE

- Data analysis (regression, Bayesian inference, classification)
- Data visualization

MATHEMATICS

- Statistics
- Probability theory
- Differential equations
- Linear algebra

SOFT SKILLS

- Communication (experienced teacher at the university level)
- Organization (international research collaborations and seminars)

LANGUAGES

- Danish (native)
- English (fluent)
- Russian (intermediate)

CERTIFICATES

INFN MACHINE LEARNING HACKATHON

COMPUTER ALGEBRA AND PARTICLE PHYSICS

KAGGLE

- Introduction to Machine Learning
- Introduction to Deep Learning
- Intermediate Machine Learning
- Time Series

EDUCATION

PHD IN PARTICLE PHYSICS — *University of Padova*

Evaluation: Summa cum laude (October 2020 - December 2023)

- Developed state-of-the-art methods for computations in particle physics
- Methods: Differential equations & Monte Carlo integration
- Extensive use of computer algebra systems (`Mathematica`, `Julia` and more)

MASTER'S IN PHYSICS — *University of Copenhagen*

Weighted average grade: 11.3/12 (September 2014 – January 2020)

Selection of courses:

- Applied Statistics: From Data to Results
- Statistical Physics
- Numerical Methods in Physics
- Introduction to Computing for Physicists

WORK EXPERIENCE

SCIENTIFIC INTERNSHIP — *Institute for Advanced Study*

Princeton, USA (April 2023 – June 2023)

- Applied my software feyntrop to perform physics computations

SCIENTIFIC INTERNSHIP — *Max Planck Insitute*

Leipzig, Germany (January 2023 – March 2023)

- Did research in cosmology and algebraic geometry

UNIVERSITY LECTURER — *University of Padova*

Padova, Italy (January 2022 – August 2022)

- Taught Newtonian physics to Bachelor's students

THEORETICAL PHYSICIST — *University of Hamburg*

Hamburg, Germany (Febuary 2020 – August 2020)

- Wrote the `Mathematica` package telescoping for particle physics

UNIVERSITY LECTURER — *Niels Bohr Institute*

Copenhagen, Denmark (September 2016 – January 2020)

- Taught Newtonian physics, special relativity, electrodynamics, complex analysis, multivariable calculus and `python` programming

PROJECTS

DEVELOPER OF THE PROGRAM FEYNTROP

- Numerical Monte Carlo integration software. GitHub link

MACHINE LEARNING MODEL FOR PARTICLE PHYSICS

- Classification model to find particles in data from the Large Hadron Collider

SCIENTIFIC ARTICLES

- Published 7 peer reviewed papers about computational particle physics
- PDFs available at https://inspirehep.net/authors/2000628

PUBLIC SPEAKER

- Given talks at 10+ international physics and didactics conferences