Ondřej Theiner Ph.D.

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Summary

Young particle physicist enjoying learning new things and who would like to bring his passion in solving challenging problems using combination of analytical skills and today's ever-present computational power into industry.

Skills

Programming: `Python`, `C++`
Tools: shell, ROOT, Docker, GitLab CI/CD, LaTeX, gnuplot, mySQL
Operating systems: Linux, macOS, Windows
Languages: Czech, English

Education

Doctoral degree (Ph.D.) - Particle Physics — Geneva, Switzerland
University of Geneva, Faculty of Science — 2019 - 2024
- In collaboration with CERN, experiments FASER and ATLAS
- Research area: Searches for Physics Beyond Standard Model

Master's degree (Mgr.) - Nuclear and Subnuclear Physics — Prague, Czechia
Charles University, Faculty of Mathematics and Physics — 2017 - 2019

Bachelor's degree (Bc.) - General Physics — Prague, Czechia
Charles University, Faculty of Mathematics and Physics — 2014 - 2017

Experience

Analysis of the LHC collision data | CERN — 2021-2024
- Searched for the new physic in the large data sets from the ATLAS experiment
- Used statistical hypothesis testing methods and tools such as `ROOT`, `Python`, `C++`

Presentation of research results | University of Geneva, CERN — 2019- 2024
- Presented work and research results at various collaboration meetings and international conferences

Optimization of data reconstruction software | CERN — 2021-2023
- Optimized part of algorithm used for triggering at the ATLAS experiment
- Saved 1.2 % of CPU time used for high level trigger online data reconstruction

Containerisation of analysis software | CERN — 2022-2024
- Preserved analysis workflow of one of the ATLAS searches using Docker and RECAST (YAML-based workflow description framework)

Development of TDAQ System | CERN — 2019- 2021
- Took part in the development of the trigger and data acquisition system.
- `C++` software responsible for the detector readout and data acquisition

Simulation and testing of silicon detectors | Charles University — 2016-2019
- Laser-tested and simulated response of strip silicon detectors for the ATLAS Upgrade, CERN

Automated processing of astronomical images | ASCR — 2013-2014
- Developed software for processing of CCD images using Java and mySQL
- Student internship at the Astronomical Institute ASCR

Other activities

- Committee member of the Astronomy Olympiad in the Czech Republic (educational scientific competition for high school students)
- Running, climbing, hiking, and playing guitar
- In 2025 hiked 3000 km across New Zealand in 117 days