

# ONDŘEJ THEINER PH.D.

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<https://otheiner.github.io>

## 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, L<sup>A</sup>T<sub>E</sub>X, 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