

Samuel Jankovch

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EDUCATION

- Charles University, Faculty of Mathematics and Physics** **2023 –**
Mgr. (MSc.) in Particle and Nuclear Physics *Prague, Czech Republic*
- Terascale Monte Carlo School, DESY** **2024**
Lectures and Tutorials *Hamburg, Germany*
- Charles University, Faculty of Mathematics and Physics** **2020 – 2023**
Bc. (BSc.) in Physics *Diploma with Honours* Grade Average: 1.00 (1 is best) *Prague, Czech Republic*
- HASCO, Georg August University of Gttingen** **2020**
Summer School Grade: A (A is best) *Gttingen, Germany*
- 8-year Gymnasium Tilgnerova** **2012 – 2020**
Primary and Secondary education *Leaving exams: All grade 1 (1 is best)* *Bratislava, Slovakia*

COURSEWORK / SKILLS

- Physics Fundamentals
- Machine Learning
- Deep Learning
- Deep Neural Networks
- Advanced Quantum Mechanics
- General Relativity
- Computing on HPC clusters
- GPU computing
- Linux administration

PUBLICATIONS

- Constituent-Based Quark Gluon Tagging using Transformers**  **2023**
ATLAS Collaboration *ATLAS Public Note*

TALKS AND CONFERENCES

- Quark Gluon Jet Taggers in Release 22** **2024**
talk *ATLAS Hadronic Calibration Workshop, Ottawa*
- Constituent based Quark/Gluon Jet Tagging** **2024**
poster *ICHEP, Prague*
- Constituent based Quark/Gluon Jet Tagging** **2023**
talk *ML4Jets, Hamburg*
- Constituent based Quark/Gluon Jet Tagging** **2023**
presentation *ATLAS Hadronic Calibration Workshop, Valencia*

THESES

Quark/Gluon Jet Tagging [↗](#) | Bachelor Thesis

2023

- supervised by Mgr. Vojtěch Pleskot Ph.D.
- ATLAS presentations
- continuing research at ATLAS
- Quark and Gluon Jets
- Jet Tagging
- Jet Constituents
- Monte Carlo Simulations
- Transformer Architecture
- <https://dspace.cuni.cz/handle/20.500.11956/182597?locale-attribute=en>

PROJECTS

Measurement and simulation of a temperature field [↗](#) | School Project

2019

- Heat Equation
- Thermal Imaging
- Thermal Conductivity
- <https://arxiv.org/abs/1909.01460>

Fake τ background in τ^* search [↗](#) | Student Faculty Grant

2021

- Fake Factor Method
- τ classification
- ATLAS Collaboration
- https://drive.google.com/file/d/1k7So9AuAj62re_s0pZRw0U2cgkDUIR0y/view?usp=sharing

Jet Identification Deep Neural Networks [↗](#) | Python Framework

2023

- Software Package
- Deep Learning
- Tensorflow
- Jet Physics
- Quantum Chromodynamics
- <https://github.com/jansam123/JIDENN>

EXPERIENCES

BEZ Transformers a.s., Intern

2019

BEZ Transformers a.s. is a world-wide transformer manufacturer.

Bratislava, Slovakia

- CAD modeling of transformers
- Fluid flow modeling using Ansys Fluent
- Transformer cooling analysis

PROFESSIONAL INTERESTS

- CERN research
- Particle Physics
- Standard Model Physics
- Beyond Standard Model Physics
- Jet Physics
- Quantum Chromodynamics
- Deep Neural Networks in HEP research
- Transformer Architectures
- Software Design
- Advanced Statistics
- GPU computing

AWARDS AND GRANTS

GAUK, Charles University Grant Agency **2024**
 2 year grant *Amount: 6600 € per year* *Charles University, Prague*

Price of the Rector of Charles University **2023**
 Best bachelor student in the field of Natural Sciences *Amount: 800 €* *Charles University, Prague*

Price of the Dean of the Faculty of Mathematics and Physics **2023**
 Second best bachelor thesis in the field of Physics *Amount: 320 €* *Charles University, Prague*

Prize of the Minister of Education, Youth and Sports **2023**
 Best bachelor student in Czech Republic *Amount: 2000 €* *Charles University, Prague*

Czecho-Slovak Student Scientific Conference in Physics [!\[\]\(cbe2492b119e39e02a1dab2af4a4b296_img.jpg\)](#) **2023**
 2.place *Prize: 130 €* *Charles University, Prague*

Scholarship for Excellent Study Results **2022**
 2nd year Bc. *Amount: 770 €* *Charles University, Prague*

Scholarship for Excellent Study Results **2021**
 Summer Term 1st year Bc. *Amount: 770 €* *Charles University, Prague*

Scholarship for Excellent Study Results **2020**
 Winter Term 1st year Bc. *Amount: 640 €* *Charles University, Prague*

TECHNICAL SKILLS

Languages: Python, C, C++

Frameworks: ROOT, Tensorflow, Scikit-learn, Uproot, Hugo

Technologies: MacOS, Linux, Git, VS Code, Docker, Slurm, Condor, L^AT_EX

SPOKEN LANGUAGES

English: C2

German: B1

Slovak: native