

Samuel Jankových

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EDUCATION

Charles University, Faculty of Mathematics and Physics **2023 –**
Mgr. (MSc.) in Particle and Nuclear Physics *Prague, Czech Republic*

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 Göttingen **2020**
Summer School Grade: A (A is best) *Göttingen, 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

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**

- 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_s0pZRW0U2cgkDUlR0y/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 | • Jet Physics | • Transformer Architectures |
| • Particle Physics | • Quantum Chromodynamics | • Software Design |
| • Standard Model Physics | • Deep Neural Networks in HEP research | • Advanced Statistics |
| • Beyond Standard Model Physics | | • 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

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: C1

German: B1

Slovak: native