

# WOJCIECH KRUPA PH.D

## EDUCATION

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**AGH University of Science and Technology, Krakow, Poland** *July 2017 - November 2022*  
Doctor of Philosophy in Physics  
Department of Particle Interactions and Detection Techniques

**AGH University of Science and Technology, Krakow, Poland** *October 2012 - July 2017*  
Master of Science in Technical Physics

## EMPLOYMENT

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**AGH University of Science and Technology, Krakow, Poland** *October 2022 - Ongoing*  
Assistant (research & teaching)  
Department of Particle Interactions and Detection Techniques

## WORK EXPERIENCE

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**LHCb Software Developer** *October 2020 - Ongoing*  
*LHCb collaboration, Geneva, Switzerland*  
Development of monitoring and calibration system for silicon detector for LHCb collaboration at CERN and documentation preparation.

**Intern - LHCb** *July 2017 - August 2017*  
*LHCb collaboration, Geneva, Switzerland*  
Work at LHCb analysis group and data analysis.

**Vacuum System Technician** *June 2015 - August 2015*  
*MVA group, DESY, Hamburg, Germany*  
Maintenance of vacuum and cooling systems and their components. Installation of the vacuum systems, preparation of system documentation.

## PROJECTS

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**Innovative application of computational intelligence in  $B_s \rightarrow D_s^* K^*$  decay analysis and autonomous data quality assessment of the UT detector at the LHCb experiment.**

*National Science Centre, No.: 2018/31/N/ST2/01471, Poland* *July 2017 - Ongoing*

Design of the autonomous software platform for analysis quality of data collected at UT detector using computational intelligence techniques. Development and implementation of software for the multiplication of data using an algorithm dedicated to the selection of events collected at the LHCb spectrometer.

## **First observation of the $B_s \rightarrow D_s^* K^*$ decay and calibration of the Upstream Tracker detector.**

National Science Centre, No.: 2020/36/T/ST2/00168, Poland

July 2020 - November 2022

A 6-month internship at CERN, Geneva, Switzerland. Development of a platform for monitoring the silicon detector at the LHC. Participation in the installation of the UT detector.

## **First observation of the $B_s \rightarrow D_s^* K^*$ decay.**

AGH University of Science and Technology in Krakow

Ongoing

First observation and Branching Fraction measurement of the  $B_s \rightarrow D_s^* K^*$  decay.

## **TECHNICAL STRENGTHS**

## **LANGUAGES**

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<b>Programming</b>	Python, C++	<b>English</b>	B2+/C1
<b>Machine Learning</b>	XGBoost, PCA, VAE, Pytorch	<b>French</b>	A2

## **ACADEMIC ACHIEVEMENTS**

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- ◇ The University of Cincinnati mentoring programme, Development of software for UT detector, supervision of two graduate students, January-October 2021;
  - ◇ XIV International Conference on Beauty, Charm and Hyperon Hadrons, 5-11, June 2022, Kraków, Poland, Organising Committee;
  - ◇ Krakow Applied Physics and Computer Science Summer School (2020, 2021), June-August, Organising Committee, Lecturer, Tutor;
  - ◇ Lecturer and tutor of Machine Learning course for master's students of applied computer science.
  - ◇ m'AI show you Data Science? BEST Autumn Season 2022 course, 2022, September, Lecturer, Examiner, Tutor;

## **COURSES AND CERTIFICATES**

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- ◇ 41st CERN School of Computing (CSC 2018), 1-14, October, 2018, Tel Aviv University, Tel Aviv, Israel; certificate of passing final exam;
  - ◇ 7th Summer School on Machine Learning in High Energy Physics (MLHEP 2021), July 15-30, 2021, Online; certificate of attendance;
  - ◇ Cambridge Assessment English; B2 CEFR certificate.

## **CONFERENCES & PAPERS**

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I own the h-index: 32. I am the co-author of over 200 scientific papers (LHCb collaboration) and the author of 6 scientific papers. As a member of the LHCb collaboration, I gave 5 talks and presented 3 posters.

List to all publications available in Scopus

ORCID ID: 0000-0002-7947-465X

## HOBBY

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Machine learning enthusiast.

West Coast Swing dance lover.

## CONFERENCES & PAPERS (DETAILS)

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### Conference talks:

- W. Krupa (et al. LHCb), *Selected results on the CKM angle  $\gamma$  measurement at LHCb*, 2nd Jagiellonian Symposium on Fundamental and Applied Subatomic Physics, Krakow, Poland, 4–9, July 2017, poster;
- W. Krupa (et al. LHCb), *Analysis of multibody beauty to open-charm decays at LHCb*, XXIV Cracow Epiphany Conference on Advances in Heavy Flavour Physics, Krakow, Poland, 9-12, January 2018, talk;
- W. Krupa (et al. LHCb), *Measurements of CPV in b and c decays at LHC*, QCD18 - 21th High-Energy Physics International Conference in Quantum Chromodynamics, Montpellier, France, 02-06, July 2018, talk, plenary;
- W. Krupa (et al. LHCb), *Recent results on the CKM angle measurement at LHCb and prospect for Run III and IV*, 3rd Jagiellonian Symposium on Fundamental and Applied Subatomic Physics, Krakow, Poland, 23-28, June 2019, poster;
- W. Krupa (et al. LHCb), *Beauty to open charm final states at LHCb*, video, ICHEP 2020, 40th International Conference on High Energy Physics, Prague, Czech Republic, 06-08, August 2020, talk, virtual;
- W. Krupa (et al. LHCb), *Recent results of measurement of CKM angle  $\gamma$  and CPV in the beauty sector at LHCb*, 19th International Conference on Hadron Spectroscopy and Structure in memoriam Simon Eidelman, 26-21, July 2021, talk, virtual;
- W. Krupa (et al. LHCb), *Measurements of the CKM angle  $\gamma$  at LHCb*, XIV International Conference on Beauty, Charm and Hyperon Hadrons, 5-11, June 2022, Kraków, Poland, talk, plenary;
- K. Sowa, W. Krupa, *Multiplication of simulated events using Machine Learning Technique*, XIV International Conference on Beauty, Charm and Hyperon Hadrons, 5-11 June 2022, Kraków, Poland, poster.

### Imporatan seminar talks:

- Measurements of the CKM angle  $\gamma$  at LHCb, 19 January 2017, Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Kraków, Poland.

### Papers (author):

- W. Krupa (et al. LHCb), *Selected results on the CKM angle  $\gamma$  measurement at LHCb*, 2nd Jagiellonian Symposium on Fundamental and Applied Subatomic Physics, Krakow, Poland, 4–9, July 2017, poster;
- W. Krupa (et al. LHCb), *Analysis of multibody beauty to open-charm decays at LHCb*, XXIV Cracow Epiphany Conference on Advances in Heavy Flavour Physics, Krakow, Poland, 9-12, January 2018, talk;
- W. Krupa (et al. LHCb), *Measurements of CPV in b and c decays at LHC*, QCD18 - 21th High-Energy Physics International Conference in Quantum Chromodynamics, Montpellier, France, 02-06,

July 2018, talk, plenary;

- W. Krupa (et al. LHCb), *Recent results on the CKM angle  $\gamma$  measurement at LHCb and prospect for Run III and IV*, 3rd Jagiellonian Symposium on Fundamental and Applied Subatomic Physics, Krakow, Poland, 23-28, June 2019, poster;
- W. Krupa (et al. LHCb), *Beauty to open charm final states at LHCb*, video, ICHEP 2020, 40th International Conference on High Energy Physics, Prague, Czech Republic, 06-08, August 2020, talk, virtual;
- W. Krupa (et al. LHCb), *Recent results of measurement of CKM angle and CPV in the beauty sector at LHCb*, 19th International Conference on Hadron Spectroscopy and Structure in memoriam Simon Eidelman, 26-21, July 2021, talk, virtual;
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