

# DR. KRZYSZTOF BOŻEK



I have been analysis data taking us back almost 14 billion years ago, to the time just after the Big Bang. Times unexplored by anybody else!

## CONTACT & INFO

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 Krzysztof Bożek

## SKILLS

### Programming

**Python** ●●●●●●  
**C++** ●●●●●●  
**Bash** ●●●●●●  
**SQL** ●●●●●●  
**LaTeX** ●●●●●●

### Operating Systems

**Linux** ●●●●●●

### Software & Tools

**Visualisation** ●●●●●●  
(e.g. matplotlib, ROOT, ...)  
**Data handling/analysis** ●●●●●●  
(e.g. numpy, scipy, pandas, ...)  
**Distributed analysis** ●●●●●●  
**Docker** ●●●●●●  
**Mathematica** ●●●●●●  
**Office** ●●●●●●

### Soft Skills

attention to details    critical thinking

individual & team work

presentation skills

### Languages

**Polish (Native)** ●●●●●●  
**English (Proficient)** ●●●●●●  
**German (B1/B2)** ●●●●●●  
**Japanese (JLPT N5)** ●●●●●●

## REFERENCES

References available upon request.

## EXPERIENCE

Sep. 2021 - current  
 München, Germany

### Self-development & volunteering

- automated repositories for undergraduate computer lab & analyses combination (Python, Docker, git),
- self-hosted gitlab (incl. custom runners), mattermost and nextcloud servers (Docker, bash),
- increasing knowledge of algorithms (leetcode) & data-science (Kaggle & LinkedIn Learning) (Python, C++, SQL).
- learning German (A2, B1 & B2 online courses by Goethe Institute).

Apr. 2018 - Aug. 2021  
 University of Freiburg, Germany

### Postdoctoral researcher

- Data analysis on data from the LHC, CERN (ATLAS Collaboration; C++, grid, Python, Docker),
- > 5× improvement in a Supersymmetry (stop-) search,
- developed a workflow and framework for data consistency checks currently used in ATLAS SUSY group (Python, git, Docker),
- working in international teams of various sizes (ranging from 2-50),
- responsible for wide range of tasks (software/analysis development, documentation, paper editing/writing, work presentation),
- running codes locally, on batch systems, and on the grid,
- academic teaching, including content and framework preparation for remote teaching.

Oct. 2013 - Jun. 2018  
 King's College London, UK

### PhD Student & Graduate Teaching Assistant

- Development of String Theory-derived models & predictions for future 100 TeV particle collider,
- wide range of skills required (programming & data analysis (C++, Python), critical thinking, problem solving, etc.),
- published impactful paper (> 35 citations),
- academic teaching (physics & computer science),
- involved in outreach activities, e.g. Pint of Science London or V&A Digital Design Weekend.

Jul. - Sep. 2012  
 CERN, Switzerland

### Summer Student

- Improving W-jet tagging with the multivariate techniques in the CMS Experiment at CERN (C++),
- 2× improvement compare to previous cut-based methods.

Jul. - Sep. 2011  
 DESY, Germany

### Summer Student

- Parameter optimisation of Monte Carlo simulations (C++),
- better data/MC agreement was achieved with proposed tunes (achieving 2× better fits).

Jul. 2010  
 INP Krakow, Poland

### Intern

- Building and testing a coincidence device (C),
- lab-work with microcontroller programming.

## EDUCATION

Oct. 2013 - Jun. 2018  
 King's College London, UK

### PhD, Theoretical Physics

- „Particle phenomenology from M theory inspired models”.
- Development of String Theory-derived models & predictions for a prospective 100 TeV particle collider.

Oct. 2011 - Jul. 2013  
 Jagiellonian University, Poland

### Master of Science, Physics

- „Numerical studies of the Balitsky-Kovchegov equation in the integral form”.
- Graduated with honours,
  - development and interpretation a novel Markov Chain Monte Carlo method solving a non-linear integral equation in QCD.

Oct. 2008 - Jun. 2011  
 Jagiellonian University, Poland

### Bachelor of Science, Physics

- „Monte Carlo simulations of low background gaseous detector”.
- Implemented simulations for studies into ultra-low-background gaseous detectors.