

# DONG QICHEN

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## EDUCATION

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**University of Manchester, UK**  
PhD Student in High Energy Physics  
Expected December 2024

**September 2020 - Present**

**University of Manchester, UK**  
Master of Physics

**September 2018 - June 2020**

Average GPA: 71.4

Relevant courses: Quantum field theory, Gravitation, Frontier of particle physics

**Shandong University, China**  
Bachelor of Science in Physics.

**September 2015 - June 2018**

Overall GPA: 83.3

## RESEARCH EXPERIENCE

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**ATLAS Qualification Project**  
*CP Violation in Vector Boson Scattering (VBS) Process*

**January 2021 - Present**

- Project supervised by Prof. Terry Wyatt.
- Developing an improved method to identify the pair production of the heaviest lepton in the ATLAS experiment in the Large Hadron Collider.
- The new method will be published for the benefit of the ATLAS collaboration.

**MPhys Project**  
*CP Violation in Vector Boson Scattering (VBS) Process*

**September 2019 - June 2020**

- Project supervised by Prof. Andrew Pilkington.
- Marked 81%.
- Searching for extra source of CP violation which contributes to the large matter anti-matter asymmetry in the universe.
- carefully searching for the extremely rare pure electro-weak VBS process using  $139\text{fb}^{-1}$  of collision data accumulated in recent years at Atlas detector.
- Events in a VBS enhanced phase space were reconstructed and unfolded to remove inefficiency and resolution of the detector, so that the measured data can be used to set limit to new physics model.
- Observables potentially sensitive to CP violation are being studied now.

**Laboratory**  
*Measurement of CP Violation in  $B^\pm \rightarrow \pi^\pm \pi^+ \pi^-$  Channel*

**November 2018 - January 2019**

- Third laboratory project supervised by Dr. Marco Gersabeck and Dr. Fedor Bezrukov, marked 90% report and 76% overall.
- By reconstructing, selecting events and estimating background, evidence of inclusive CP violation in this channel by measuring difference between  $B^+$  and  $B^-$  events cross section was observed.
- local CP violation in certain  $m_{\pi^+ \pi^-}$  phase spaces are observed.

**Competition****September 2017*****China Undergraduate Mathematical Contest in Modeling***

- A team of 3 students developing a mathematical model in 3 days to solve a problem of reconstructing and denoising CT images.
- Team leader and major contributor, first price in Shandong province of China.

**Competition****June 2017 - September 2017*****Shenzhen Cup Mathematical Modeling Competition***

- A team of 3 student work together in 3 months to model an open-ended real life problem, supervised by Professor Baodong Liu.
- The relation between network quality and customer satisfaction in online video playback scenario was studied.
- relation between behavior of network transmission protocol in different network quality and variables selected to reflect user satisfaction were evaluated.
- leader of the team and main contributor, reached the last 16 teams among China.

**ADDITIONAL EXPERIENCE**

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**Voluntary Work****June 2016 - September 2017*****Volunteer Teacher Supporting Primary Education in Remote Area***

- Group of first year students in the university volunteered to help primary school students who live in remote area in Sichuan province of China during summer break.
- Achieved 120 hours of voluntary work and the team helped hundreds of children.
- Local tobacco farming which can potentially reduce poverty was also investigated.

**Student Union Officer****September 2015 - June 2017*****Officer and Minister of Voluntary Department of Shandong Student Union***

- Responsible for organising voluntary work hosted by the department.
- Constructing and Managing a team of 20 undergraduate officers.

**SKILLS AND INTERESTS**

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**Software:** Proficient in programming with C/C++ and python; Using PhotoShop**Language:** Chinese(Native), English(Professional)**Interests:** Badminton, swimming, graphic design, programming**PURPOSE OF TRAVEL**

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- Being a visiting student from the University of Manchester who is attached to CERN.
- Visiting and contributing to the ATLAS experiment in Geneva, which I have only been seeing virtually.
- It is a dream for a PhD student in the field of particle physics to visit the LHC.