QICHEN DONG

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EDUCATION

University of Manchester — September 2020 - February 2025
PhD High Energy Physics — *Manchester, UK*

· Thesis: *Novel Boosted $\tau_{\mathrm{lep}}\tau_{\mathrm{had}}$ Reconstruction Techniques for TeV–Scale Graviton Search in $HH \to b\bar{b}\tau_\mu\tau_{\mathrm{had}}$ Channel with the ATLAS Detector*

University of Manchester — September 2018 - June 2020
Master of Physics — *Manchester, UK*

· First Class Honours
· Ranked 30th out of 150 students in the final year.

Shandong University — September 2015 - June 2018
BSc Physics — *Jinan, CN*

· Overall GPA: 83.3

WORK EXPERIENCE

University of Oxford — April 2025 - April 2028
Postdoctoral Research Associate — *Oxford, UK*

· Three-year post with a prospective start date in April 2025.
· Supervised by Prof. Chris Hays.

Qube Research and Technology — August 2022 - February 2023
Intern Quantitative Researcher — *London, UK*

· Main contributor to the 10-Q and 10-K financial reports similarity analysis using NLP techniques.
· Conducted a similar project on sentiment analysis of Japanese financial reports.
· Designed and developed novel algorithms to identify abnormal data in the financial time-series.
· Developed and validated a price correction model for corporate events for equities.
· Collaborated with a team to develop and optimise database infrastructure for real-time financial market data, enhancing data retrieval and storage efficiency.
· Hold return offer for a full-time position.

University of Manchester — September 2020 - September 2023
Graduate Teaching Assistant — *Manchester, UK*

· Demonstrator in the C++ / Python laboratories for year-2 and year-3 undergraduate physics students.
· Demonstrator in the year-3 particle physics laboratory for undergraduate students.
· Prepared a set of interactive electromagnetic field and radiation animations for the year-3 electrodynamics course. Used in the lectures and made available offline to the students to use and modify.

RESEARCH EXPERIENCE

ATLAS experiment, CERN — April 2025 - September 2028
ATLAS Software Development Grant — *Geneva, CH*

- Six-month project to develop and enhance the ATLAS offline software.
- Merge custom inference implementations from various groups into a unified version.
- Integrate new machine learning inferencing technology.

University of Manchester   September 2020 - September 2024
PhD Project   *Manchester, UK*

- Supervised by Prof. Terry Wyatt FRS.
- Proposed, developed, implemented, and tested improved methods to identify the highly boosted pair production of the τ leptons in the lep-had channels — the electron-removal τ_{had} and the muon-removal τ_{had} reconstruction applied in Athena.
- Algorithms went through strict scrutiny, now running in Tier-0 ATLAS data processing system. These methods have been adopted by the ATLAS collaboration as the recommended taggers for boosted $\tau_{\mathrm{lep}}\tau_{\mathrm{had}}$ identification.
- The muon-removal τ_{had} technique has been benchmarked with data, achieving a three- to five-fold improvement in the signal efficiency and signal-to-background ratio. Paper accepted by EPJC.
- Single-handedly performing a search for resonant production of Higgs boson pairs in the highly boosted $bb\tau\tau$ channel.
- Member of the Run 2+3 $H \to aa \to \mu\mu\tau_\mu\tau_{\mathrm{had}}$ analysis, which uses the muon-removal τ_{had} reconstruction as a key ingredient.
- Three papers are scheduled to be published for the benefit of the ATLAS collaboration, in which I will be the primary author.
- Presented the TauCP group summary talk at the ATLAS 30th birthday week, 2022, Lisbon.
- Expert reviewer for the ATLAS Run 2 $H \to aa \to 4\tau$ analysis.

ATLAS experiment, CERN   April 2022 - August 2022
Developer and Maintainer   *Geneva, CH*

- Long-term-attached PhD student.
- Developer and reviewer for Athena, the ATLAS offline software.
- Senior shifter in the ATLAS software merge requests review team.

ADDITIONAL EXPERIENCE

Gasala, Remote Village   June 2016 - September 2017
Volunteer Primary School Teacher   *Sichuan, CN*

- Led a team of volunteers.
- Organised math and science lessons for school-age children.

Shandong University   September 2015 - June 2017
Associate Lead of Student Union   *Jinan, CN*

- Organised voluntary activities for the university.
- Led a team of student representatives.

SKILLS AND INTERESTS

Programming	Proficient in programming with C/C++ and Python
Data related	Machine learning, big data analysis, statistical analysis
Teamwork	Strong communication skills in highly collaborative environments
Languages	Chinese (Native), English (Professional)
Interests	Graphic design, accelarated / distributed computing