

# Mehul G Depala

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Physics PhD Student at University of Liverpool. Part of the ATLAS collaboration at the LHC in CERN. Particular interest in Physics Beyond the Standard Model and QFT. Involved in project regarding the reconstruction of particles through use of Graph Neural Networks.

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## Education

- 2023–Present **PhD Particle Physics**, *University of Liverpool*.  
*Supervisors: Prof Andrew Mehta (P), Prof Monica D'Onofrio (S)*  
Thesis: Search for third-generation leptiquarks with the ATLAS detector
- 2018–2020 **MSc Theoretical Physics (QFFF)**, *Imperial College London, Merit*.  
*Supervisor: Prof Arttu Rajantie*  
**Courses include:** Adv. Quantum Field Theory, QED, Black Holes, Cosmology, General Relativity, SUSY.
- 2015–2018 **BSc Theoretical Physics**, *Queen Mary, University of London, First-class Honours (80%)*.  
*Supervisor: Prof Steve Thomas*  
**Courses Included:** Introduction to C++, Complex Variables, Mathematical Techniques and Physical Dynamics.
- 2013–2015 **A Levels**, *Woodhouse College, London*.  
Mathematics (A) Physics (B) Further Maths (C)

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## Notable Projects

- MSc *Inflationary Cosmology and Dark Matter*  
Dissertation Topic about models of dark matter during inflation, the generation of perturbations and the observational imprints left behind on the CMB. Required an extensive review of literature, understanding mathematical methods of calculating density perturbations (particularly using stochastic techniques). Understanding how variety of methods calculating correlation functions evolved and improved. Involved using numerical calculations to put limits on observed quantities.
- BSc *Kaluza Klein Theory*  
Dissertation Topic about the unification of gravity and electromagnetism. Required me to develop a firm grasp of ideas in General Relativity, Elementary Particle Physics and thus work on mathematical tools such as tensor analysis.
- Public Talks
  - *Machine Learning Applications in High Energy Physics at ATLAS* - Alan Turing Institute - Data Science Event
  - *Hidden Dimensions and Gravity* - BCUR (British Conference of Undergraduate Research) and CAPS (Conference of Physics and Astronomy)  
Winner of "Best speaker award" at CAPS

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## Technical and Personal skills

- Programming Languages C++, Python

Software and Tools	PyTorch
Languages	English (Native), Gujarati (Native) & Hindi
Team work	Leadership and organizational skills acquired via work experience and group projects
General Skills	Hard-working, determined, persevere through adversity, adaptable, driven, kind and thoughtful.

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## Employment

- 2021–2023 **Customer Service**, *Tesco and Sainsbury's*, London.  
Duties handling standard store procedures (deliveries, customer service and stock). Allows building mental resilience and emboldening desire for career ambitions.
- 2016–2020 **Customer Service**, *ProActive Rail*, London.  
Worked in contracts with Ticketmaster and TFL. Duties regarding customer service. Developed interpersonal and communication skills. Required taking the initiative and making critical decisions, time management and organizational skills.

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## Interests and extra-curricular activity

- Hobbies Sports: cricket, tennis and cycling. Other: photography, travelling and reading (predominantly history and fantasy genres.)

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## References - Available Upon Request