

Alina Isobel Hagan



Education:

2020-2024 PhD, Lancaster University, ATLAS Experiment.

- Particle Physics, Supervised by Vato Kartvelishvili.
- Analysis Contact for Extracting Gluon TMDs from $J/\psi + \gamma$ in pp .

2015-2020 MSc, University of Glasgow.

- First Class Masters in Physics.
- Masters project;
 - Measurement of b -jet substructure observables.
 - Exploration of novel overlap removal methods and Soft-Drop jet cleaning.

Experience:

2022 ATLAS Collaboration

- BLS Trigger group.
- Authorship qualification project supervised by Adam Barton and Pavel Renicek.
- Updating ATLAS BLS Trigger Validation package and tools to Run 3 framework, expanding available tools and modernisations.

2019 University of Glasgow.

- Nuclear and Hadron Physics research group.
- Supervised by Dr Simon Gardner.
- Applying GNNs for shower recognition at the Crystal Ball detector.
 - Utilising Graph Neural Network layers from 1902.07987 and a YOLO-style approach to identify, separate and reconstruct overlapping showers.

Presentations & conference:

2023 ATLAS Week, October 2023

- Early Career Scientist Presentation - Exploring Proton Structure: Gluon TMDs at ATLAS

2023 Beauty 2023

- New Heavy Flavour states in ATLAS
- B -Hadron reconstruction in early ATLAS Run 3 data

2023 Quarkonia as Tools 2023

- Inclusive quarkonium production - experimental overview.

2022 ATLAS UK Annual Meeting 2022

- Precision physics with quarkonia.

2022 Quarkonia as Tools 2022

- Quarkonium and TMDs in pp - past and future measurements.

Academic Interests:

Quarkonium Physics.

- J/ψ , Di- J/ψ , $J/\psi + \gamma$, Υ studies, TMD extraction.

Trigger Development.

- Muon and b -physics trigger development, validation, and shift work.

Projects:

2022 terminal_rendering

- A simplified implementation of a rendering engine, with minimal dependencies, designed to work on any unicode compatible terminal.

2023 Rockets

- Designing and building 'L1' rockets. Two in-progress designs, minimum diameter and full body. Launches scheduled for November 2023.

2023 PCB Design

- Designing and building small form-factor neopixel-based smart LED boards for use with raspberry pi or arduino, and more.

Other:

Skills C++, Python, ROOT, CMake, Vim, Git, LaTeX, Laser cutter operation, 3D printing, Arduino and RP2040 programming.

Personal Information Age - 25, Gender - Female, Nationality - Scottish.

Hobbies Photography, running, maker activities.