

IDENTIFYING INFORMATION:

NAME: Hopkins, Walter

ORCID iD: <https://orcid.org/0000-0001-7814-8740>

POSITION TITLE: Physicist

PRIMARY ORGANIZATION AND LOCATION: Argonne National Lab, Lemont, Illinois, United States**Professional Preparation:**

ORGANIZATION AND LOCATION	DEGREE (if applicable)	RECEIPT DATE	FIELD OF STUDY
University of Oregon, Eugene, Oregon, United States	Postdoctoral Fellow	04/2013 - 09/2018	High-Energy Physics
Cornell University, Ithaca, New York, United States	PHD	01/2013	Physics
Rochester Institute of Technology, Rochester, New York, United States	BS	05/2007	Physics and Applied Science

Appointments and Positions

2018 - present Physicist, Argonne National Lab, Lemont, Illinois, United States

Products**Products Most Closely Related to the Proposed Project**

1. ATLAS Collaboration. Search for New Phenomena in Two-Body Invariant Mass Distributions Using Unsupervised Machine Learning for Anomaly Detection at $\sqrt{s}=13\text{ TeV}$ with the ATLAS Detector. 2024 February 20; 132(8):081801. Available from: <https://link.aps.org/doi/10.1103/PhysRevLett.132.081801> DOI: 10.1103/PhysRevLett.132.081801
2. ATLAS Collaboration. Observation of W Production in pp Collisions at $\sqrt{s}=13\text{ TeV}$ with the ATLAS Detector. 2022 August 04; 129(6):061803. Available from: <https://link.aps.org/doi/10.1103/PhysRevLett.129.061803> DOI: 10.1103/PhysRevLett.129.061803
3. The ATLAS Collaboration. Search for a scalar partner of the top quark in the all-hadronic $t\bar{t}$ plus missing transverse momentum final state at $\sqrt{s}=13\text{ TeV}$ with the ATLAS detector. The European Physical Journal C. 2020 August 13; 80(8):737. Available from: <https://doi.org/10.1140/epjc/s10052-020-8102-8> DOI: 10.1140/epjc/s10052-020-8102-8
4. Benjamin D, Chekanov S, Hopkins W, Li Y, Love J. Automated detector simulation and reconstruction parametrization using machine learning. Journal of Instrumentation. 2020 May 29; 15(05):P05025. Available from: <https://dx.doi.org/10.1088/1748-0221/15/05/P05025> DOI: 10.1088/1748-0221/15/05/P05025
5. The ATLAS Collaboration. Searches for third-generation scalar leptoquarks in $\sqrt{s}=13\text{ TeV}$ pp collisions with the ATLAS detector. Journal of High Energy Physics. 2019 June 28; 2019(6):144. Available from: [https://doi.org/10.1007/JHEP06\(2019\)144](https://doi.org/10.1007/JHEP06(2019)144) DOI: 10.1007/JHEP06(2019)144

Other Significant Products, Whether or Not Related to the Proposed Project

1. The ATLAS collaboration. Constraints on mediator-based dark matter and scalar dark energy models using $\sqrt{s} = 13$ TeV pp collision data collected by the ATLAS detector. Journal of High Energy Physics. 2019 May 23; 2019(5):142. Available from: [https://doi.org/10.1007/JHEP05\(2019\)142](https://doi.org/10.1007/JHEP05(2019)142) DOI: 10.1007/JHEP05(2019)142
2. The ATLAS Collaboration. Search for a scalar partner of the top quark in the jets plus missing transverse momentum final state at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics. 2017 December 15; 2017(12):85. Available from: [https://doi.org/10.1007/JHEP12\(2017\)085](https://doi.org/10.1007/JHEP12(2017)085) DOI: 10.1007/JHEP12(2017)085
3. The ATLAS Collaboration. ATLAS Run 1 searches for direct pair production of third-generation squarks at the Large Hadron Collider. The European Physical Journal C. 2015 October 29; 75(10):510. Available from: <https://doi.org/10.1140/epjc/s10052-015-3726-9> DOI: 10.1140/epjc/s10052-015-3726-9
4. The ATLAS collaboration. ATLAS Liquid Argon Calorimeter Phase-I Upgrade : Technical Design Report. 2013 September. Available from: <https://cds.cern.ch/record/1602230> isbn: CERN-LHCC-2013-017

Synergistic Activities

1. 2022-present: ATLAS ML Forum co-convenor. Organized meetings to focus on impact of ML methods on physics results. Also queried the physics and upgrade community to understand where the greatest needs and potential for ML lie.
2. 2022-present: ATLAS Full Simulation convenor. Coordinated various efforts to profile and improve the computational performance of the ATLAS calorimeter simulation based on Geant4.
3. January 2024-present: Co-lead of the High-Energy Physics Center for Computing Excellence Scaling Machine Learning group. The aim of the group is to facilitate the use of large-scale computing resources (e.g., High-Performance Computers, HPCs) for HEP ML applications.
4. 2018-2024: PI for the Argonne ATLAS Aurora Early Science Project. Preparing both an ATLAS ML workload, flavor tagging with uncertainty quantification, and standard workload, event generation with MadGraph, for use on the upcoming Aurora supercomputer.
5. 2020-2022: ATLAS SUSY Strong Production Subgroup convenor. Reviewed SUSY Strong analyses for unblinding approval and preparation for publication.

Certification:

When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to domestic and foreign appointments and positions. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802.

Certified by Hopkins, Walter in SciENcv on 2024-04-21 18:45:33