John C.S. Myers

Data Scientist, Particle Physicist

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Education

University of Oregon
Eugene, OR

Doctorate of Philosophy in Physics
June 2019

- **Dissertation**: Search for Higgs Boson Pair Production in the bbWW Channel Using the ATLAS Detector
- **CERN (European Organization for Nuclear Research)**, Geneva, Switzerland — *May 2015- December 2018*

The Ohio State University
Columbus, OH

Bachelor of Science in Physics
May 2013

- **Accelerated Lifetime Testing**, ATLAS electronics lab

Experience

CERN
Geneva, Switzerland

Data Scientist
May 2015 - December 2018

- Mined 100 TB of ATLAS data to search for indications of rare processes using a C++ framework and distributed computing
- Published results in the Journal of High Energy Physics and in 174-page dissertation
- Used predictive modeling to estimate background contribution and improved the statistical power by a factor of 3 with python scripting and plotting with matplotlib
- Improved signal-to-background separation by a factor of 2 using python pandas library
- Successfully validated Monte Carlo simulated data through the design and implementation of a background-rich data region
- Collaborated with an international team of 30 people across 9 time zones

Software Reprocessing Coordinator

- Developed and maintained infrastructure for large scale software validation following the Agile Software Development model
- Provided continuous software development support by training and coordinating a team of 15+ software validation experts
- Delivered 97% data taking efficiency during 2018 through collaborative problem solving across many disciplines

University of Oregon
Eugene, OR

Research and Teaching Assistant
July 2013 - May 2015

- Taught undergraduate-level courses for classes of 30 or more students
- Reduced background acceptance by 50% through developing a new trigger algorithm to isolate regions of interest
- Reduced trigger thresholds by 10% by designing a filtering algorithm to remove noise from the data

Publications & Awards

Search for Higgs boson pair production in the bbWW decay mode at Sqrt(s) = 13 TeV with the ATLAS detector
April 2019

J. High Energ. Phys. Volume 4

Ph.D. Thesis Award
May 2019

University of Oregon

Skills

Languages	Python, C++
Frameworks and Libraries	SQL, pandas, numpy, scikit-learn, keras, matplotlib, ROOT Data Analysis Framework, Jupyter
Computing and Software	Linux, Git, Rucio, VIM, SSH, Windows Office Suite, HTML GIT, JIRA, Mattermost, TWIKI
Competencies	Big Data, Machine Learning, Project Management, Analysis, Algorithm Development, Data Visualization