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Summary

Particle physicist transitioning to private-sector data science. Extensive experience with analysis of large data sets using C++ and Python. Excellent critical thinking, problem solving, and communication skills.

Education

Ph.D. in experimental particle physics, Ohio State University, Columbus, OH	2011 - 2017
B.S. in physics, University of Kansas, Lawrence, KS	2007 - 2011
B.A. in mathematics and anthropology, University of Kansas, Lawrence, KS	2007 - 2011

Work Experience

Graduate Research Associate, Ohio State University/CERN   2013 - 2017

Worked in large data analysis collaboration to perform precise measurements of fundamental particles and search for new signatures of the Higgs boson with petabyte scale datasets collected at the CERN Large Hadron Collider

- Developed C++ software frameworks used by physicists at Ohio State University, Indiana University, Oxford University (UK), Georg-August-Universität Göttingen (Germany), and Universita Roma Tre (Italy)
- Designed algorithms to sift through terabytes of physics data, categorize events based on significant criteria, and optimize reconstruction of subatomic interactions using combinatorical likelihoods
- Created data-driven methods for modeling background processes in searches for novel experimental signatures
- Experience with statistical techniques used to model complex multivariate processes and calculate significance of observed results

Worked extensively with the control software of the ATLAS detector, designing and commissioning user interfaces

- Tested and installed sensitive silicon and diamond-based pixel detectors
- Used WinCC to create data structures and interface for efficient detector monitoring and operation

Presented analysis work and results to research groups inside the collaboration and to larger audiences at international scientific conferences

Developed and maintained Condor computing cluster used for simulation and data analysis

Graduate Teaching Associate, Ohio State University   2011 - 2013

- Taught undergraduate holography, general physics classes both with and without calculus, and lab courses (each 20-30 students)
- Received Hazel Brown Outstanding Teaching Assistant Award in 2012

Skills

- Extensive experience with data analysis in C++ involving large volume data sets on distributed computing systems with Condor and distributed computing
- Comfortable with Python, Git, shell scripting, LaTeX, WinCC, and Mathematica
- Strong oral and written communication skills. Experience giving both formal and informal presentations
- Works well in teams, both in leadership and supporting roles
- Accustomed to collaborating with both large and small groups across time zones and continents
- Fluent in French