Thomas Mastrianni Perry, Ph.D.

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I was formally trained at the world's leading particle physics laboratory (CERN) to collect, clean, analyze, and present data on the petabyte scale. As a graduate student and postdoc there, I wrote software primarily in `c++` and `Python` for use in the `Linux`-based environments of analysis and datataking operations. Recently I have been teaching, and am ready to bring my technical skills to industry.

Education

2016 **Ph.D. in Physics** University of Wisconsin–Madison, Madison, WI
A measurement of $Wb\bar{b}$ production and a search for monophoton signals of dark matter using the CMS detector at the CERN LHC

2009 **B.S. in Physics** (astrophysics minor) Union College, Schenectady, NY
Magna Cum Laude with departmental honors (4x Dean's List, ΦBK, ΣΞ, ΣΠΣ)
Multi-frequency VLBI imaging of two compact symmetric objects

Relevant Experience

Graduate Research Assistant 2012-2016, University of Wisconsin and CERN
Collected and analyzed data from the CERN Large Hadron Collider (LHC), specializing in dark matter searches and heavy-flavor physics with displaced secondary vertices
- contributed to the collection and analysis of the largest physics dataset in history
- built software tools to aid in particle identification for use across the collaboration
- wrote software for efficient cleaning, data-driven analysis, statistical modeling, interpretation, and visualization of petabyte-scale datasets, including machine learning techniques (neural net and BDT)
- ran analysis software on a distributed computing network using HTCondor, stored in HDFS filesystems
- took shifts in the control room and **served as on-call expert monitoring data-taking, diagnosing problems, and delivering solutions in a fast-paced, high-pressure environment**

Postdoctoral Research Fellow 2016-2018, Florida State University and CERN
Lead analyses using the Higgs boson to search for evidence of new physics and was appointed to HCAL Operations Manager, overseeing all aspects of data collection for one of only four CMS subdetectors.
- wrote custom codebase for physics analysis (in c++) that is still in use 5 years later
- trained and supervised subdetector experts who monitored datataking in real time, chaired weekly meetings of 30 physicists, carried a CERN phone 24/7 for emergency response
- had the authority to speak on behalf of a subdetector in a 3500+ person international collaboration

Math Teacher/Tutor 2019-present, Santa Fe Preparatory School
Taught algebra and calculus, as well as tutoring privately
- improved presentation skills, organization, and communication with nonexperts

Skills

detail-oriented approach to technical tasks; collaborative software design in multinational groups; leadership within these groups; technical and nontechnical communication; critical thinking and problem solving; intentional; organized; internally-driven

`c++`, `Python`, `Bash`, `Linux/Unix`, `Git/Subversion/CVS`, `ROOT`, `HTCondor`, LaTeX, `VIM`
Some experience with: `SQL`, `Jenkins`, `Hadoop`, `Docker`, `Puppet`, `Jira`