SIINN CHE

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OBJECTIVE

Ph.D. student in Physics with extensive experience in large experiment data from **CERN**. Expert in programming with +5 years of experience in Ph.D. projects. Strong mathematics and statistics background from **U.C Berkeley** with **B.A in Mathematics**. Enjoy working in collaborative environment with a team of +10 scientists. I become passionate in **data science, machine learning, and big data**. With my quantitative skills, intellect and training, I wish to make a positive impact in data science.

EDUCATION

Ph.D. **Experimental Particle Physics, The Ohio State University** **2014 – 2017**

"Search for Long-lived Neutral Massive Particle with Displaced dilepton Resonance at the LHC"

M.S. Experimental Particle Physics, The Ohio State University ("Higgs Boson as a Tool for Discovery at the LHC") 2012 – 2014

B.A. **University of California, Berkeley, Mathematics & Physics,** **2007 – 2011**

Academic Achievement Scholarship Award, 2008, Linear Algebra (A+), Computational Physics (A)

RESEARCH EXPERIENCE

CERN (The European Organization for Nuclear Research) **Geneva, Switzerland, 2014 – 2017**

- Processed and analyzed large (~200 TB) experiment data from CERN with reduction rate < 5%
- Collected and analyzed >3 years of detector operation data to study its stability using Python
- Developed an algorithm to improve the efficiency of reconstructing rare physics data with efficiency > 90%
- Developed a visualization tool for experiment data at Ohio State Physics using Python Web App

LBNL (Lawrence Berkeley National Laboratory) **Berkeley, CA 2009 – 2012**

- Simulated and analyzed femtosecond molecular dynamics using MATLAB

INDEPENDENT PROJECT

TO-BE-ADDED

PROFESSIONAL SKILLS

Data science	Machine learning (classification, regression, clustering, feature engineering)
	Statistical Methods (Bayesian probability, hypothesis testing, confidence intervals, principal component analysis)
Programming	Python (web app development, detector monitoring, scikit-learn, numpy, scipy)
	C++ (main language for analysis), MySQL, MATLAB, Mathematica, Linux, LaTeX

SELECTED PUBLICATIONS PRESENTATION

[1] S. Che, "Signal track reconstruction efficiency in Large radius tracking," ATLAS Experiment, IDTR-2016-006 2016.

[2] S. Che, N. Pettersson, and J. Duarte, "Development and Performance of algorithms to reconstruct tracks at large radii," ATLAS Experiment, PUB-IDTR-2016-03 2016.

[3] S. Che, "Development of large radius tracking," in ATLAS Experiment, Chamonix, France, 2015.

[4] S. Che, "Search for long-lived massive particles with the ATLAS experiment at the LHC," in Graduate Summer Talk, Columbus, Ohio, USA 2016.