Josiah Couch

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Education

University of Texas at Austin, Austin, TX

Ph.D in Physics (3.6 GPA)   *August 2013 - May 2021*

- Adviser: Willy Fischler
- Field: AdS/CFT

Oklahoma State University, Stillwater, Oklahoma

B.S in Physics and B.S. in Mathematics   *August 2009 - August 2013*

Experience

Boston College, Chestnut Hill, MA

Postdoctoral Research Fellow in Computer Science Department   *January 2021 - Present*

- Working on problems related to the graph alignment or graph matching problem, an example of a problem in combinatorial optimization.
- Applying statistical techniques to determine failure conditions for the maximum a posteriori (MAP) estimator.

University of Texas at Austin, Austin, TX

Ph.D. Candidate in Weinberg Theory Group under Prof. Willy Fischler   *August 2013 - May 2021*

- Published six papers in peer-reviewed journals with a total of 330 citations by 240 unique works (according to inspirehep.net).
- Collaborated with 14 other researchers, including six external collaborators from two institutions.
- Gave six external talks, five at conferences, and participated in three additional conferences and schools
- Awarded 2018 OGS Summer Only Fellowship
- Solved complex problems using differential geometry, linear algebra, and differential equations, along with the Mathematica software package

Teaching Assistant   *August 2013 - December 2020*

- Evaluated student work and provided critical feedback
- Modeled analytic problem solving to students through official solutions to problem sets and in live review sessions
- Coached students in quantitative problem solving as well as understanding of course subject matters
- Courses included graduate quantum mechanics (1 semester), undergraduate quantum mechanics (6 semesters), forensic science (2 semesters), electricity and magnetism (3 semesters), and engineering physics labs (5 semesters)
- Nominated for the UT Services for Students with Disabilities Appreciation Award in Fall 2016

Graduate Research Assistant with Center for Particles and Fields under Prof. Peter Onyisi   *June - July 2014*

- Work related to the ATLAS experiment at the Large Hadron Collider
- Optimized feature selection for a particle physics analysis using simulated data, python, and the ROOT TMVA boosted decision tree implementation (used through pyROOT)
- Developed a python script to pass configuration file from database to fast tracker system

Oklahoma State University, Stillwater, OK

Undergraduate Researcher in Experimental Particle Physics Group under Prof. Flera Rizatdinova   *January 2010 - May 2012*

- Analyzed particle physics data from the DØ and ATLAS experiments using C/C++ and the ROOT package

Skills

- **Confident with**: Python, Pandas, Mathematica, LaTex
- **Exposure to**: Sci-Kit Learn, Git, Java, Javascript, Haskell, C/C++, HTML, SQL