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EXPERIENCE

- **Data Science Fellow** Sept 2019 - Present
Insight Data Science *San Francisco, CA*
 - Consulted with a company to design a real-time anomaly detection algorithm for their water flow monitoring system
 - Engineered and modeled 3 months of daily sensor data (10K events/day) from multiple environments using isolation forests to identify rare flow behavior on the production system
 - Created and deployed dynamic visualizations of anomalous time series data into client's online workflow for their customers
- **Graduate Student Researcher** Aug 2012 - May 2019
University of Alabama *Tuscaloosa, AL*
 - Analyzed PBs of detector data from high energy particle collisions at the CERN Large Hadron Collider, searching for new physics as a member of a 4000+ person collaboration
 - Managed long-term (3 year) statistical data analysis team of 10 researchers, leading the new result to publication, and member of 4 other data analysis teams
 - Wrote dedicated analysis packages for reducing data to GBs on remote computing clusters distributed across a worldwide high-performance computing grid
 - Improved particle identification by up to 50% in analysis region over standard procedure
 - Reduced fake signals to detector threshold by tuning custom tagging algorithms in data samples produced from Monte Carlo simulation
- **Graduate Teaching Assistant** Aug 2012 - May 2018
University of Alabama *Tuscaloosa, AL*
 - Instructed multiple 2 hour long physics labs of 50 students each, conducting weekly experiments using statistical data analysis techniques
 - Started a new research-based journal club for 20 graduate students, postdocs, and professors in the physics department, leading biweekly sessions
- **Graduate Research Assistant** Jan 2016 - Aug 2017
European Organization for Nuclear Research (CERN) *Geneva, Switzerland*
 - Coordinated daily detector operation for 50 member team, responsible for promptly addressing problems with flexibility as a regular 24/7 on-call expert
 - Performed a data analysis to synchronize over 3500 new detector readout channels for production use in 2016 and 2017

SKILLS

- **Computing:** Python, C++, SQL, bash, git, \LaTeX , HTML, Unix, Jupyter, MATLAB, Mathematica
- **Libraries:** NumPy, pandas, SciPy, scikit-learn, Keras, TensorFlow, matplotlib, seaborn, plotly
- **Statistical:** Machine learning, deep learning, computer vision, regression, classification, clustering, neural networks, regularization, dimensional reduction, feature engineering

EDUCATION

- **Ph.D., Physics**, The University of Alabama, Tuscaloosa, May 2019
- **M.S., Physics**, The University of Alabama, Tuscaloosa, May 2016
- **B.S., Mathematics**, Michigan Technological University, April 2011