Kevin Ghorbani

kevin@icecube.wisc.edu | (608) 285-2834 | www.kevinghorbani.com
List of publications: http://inspirehep.net/author/profile/Kevin.Ghorbani.1

- Legally authorized to work in the US for any employer

CORE COMPETENCIES AND PROGRAMMING SKILLS

Project Management • Product Development • Problem Solving • Critical Thinking • Commercial Acumen
Quantitative Analysis • Big Data Queries • Data Mining • Statistics • Mathematics • Physics • Predictive Modeling •
Data Visualization • Data Analytics and Processing • Machine Learning • Research

Programming Languages: *Expert:* Python, C/C++, SQL, Shell script, *Prior-experience: R,* Matlab, HTML
Machine Learning Techniques: *Expert:* scikit-learn, *Prior-experience:* TensorFlow and Keras
Tools: *Expert:* NumPy, SciPy, pandas, Matplotlib, Jupyter, Subversion, Git, UNIX/Linux, *Prior-experience:* Flask

PROFESSIONAL EXPERIENCE

WIPAC / University of Wisconsin-Madison, Madison, WI **2014 - present**
Graduate Research Assistant

- Project management by designing and executing an analysis with large neutrino datasets for discovery of sterile neutrinos, resulting the most sensitive analysis ever existed for this hypothesis
- Introducing a new decision making strategy to the analysis which led to 80% efficiency increase
- High-level strategic planning with experience in machine learning techniques, statistical modeling and numerical data optimization, resulting the grow of classification efficiency by 6x and resolution by 2x using regression models, from the previous analyses
- Utilized of numerous statistical techniques including sensitivity analysis, likelihood fitting, Bayesian statistics, hypothesis testing, as well as data visualization
- Resource management by administering hundreds of TB of data per year, which resulted in running and monitoring to massive computational processes on CPU and GPU clusters

Lorentz Institute, Leiden, NL **2012 - 2014**
Research Assistant

- Produced and studied complex Monte Carlo simulations and gained new understanding of a cosmological model
- Created an advanced model and was able to explain and predict cosmic strings' behavior during interactions

Institute for Research in Fundamental Sciences, Tehran, IR **2008 - 2011**
Researcher

- Performed data reduction of noisy and ambiguous data of HST raw images and retrieved scientific information
- Analyzed galactic image channels and determined cosmological properties via photometry
- Performed statistical analysis on cluster data and obtained dark matter properties

OTHER DATA SCIENCE PROJECTS

- ***Stock Market Analysis:*** Analyzed news content using APIs in order to predict its effect on the stock market
- ***Detector Data Calibration:*** Performed data calibration using statistical methods to adjust latest ice models
- ***Travel Web App:*** Developed a web app (using Google maps APIs) and machine learning regressors to predict travel time at given time in New York City and achieved accuracy of few minutes

EDUCATION

University of Wisconsin-Madison Madison, WI
Ph.D., Physics - Data Science expected October 2018
Leiden University Leiden, NL
M.S., Physics - Computational January 2014
Sharif University of Technology Tehran, IR
B.S., Physics July 2011