

# Kevin Ghorbani

[kevin@icecube.wisc.edu](mailto:kevin@icecube.wisc.edu) | (608) 285-2834 | [www.kevinghorbani.com](http://www.kevinghorbani.com)

- Legally authorized to work in the US for any employer

Versatile, result-driven data scientist with 10+ years of experience working with various types of data and developing exceptional data analyses in many different platforms. Proven experience in working with complex datasets in both small and large multinational teams. Great teamwork, collaboration, and communication skills demonstrated by working with over 350 international scientists in a \$300,000,000 project, which resulted in more than 20 peer-reviewed publications last year. Avid problem solver with diverse experience, critical thinker, and a fast learner. Having the ability to adapt to new industries and transform all skill-sets. Self motivated, and able to lead a team of data scientists.

## 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 • Research  
Data Visualization • Data Analytics • Machine Learning • Advanced Python Programming • Data Processing

**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 notebook, Subversion, Git, UNIX/Linux, *Prior-experience:* Flask

## PROFESSIONAL EXPERIENCE

**WIPAC / University of Wisconsin-Madison, Madison, WI**

**2014 - present**

**Graduate Research Assistant**

- Project managing by designed and executed an analysis with large neutrino datasets for discovery of a new elementary particle, resulting the most sensitive analysis ever existed for finding a solution for this hypothesis
- Problem solving by 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 and numerical data optimization, resulting efficiency of event selection by pattern to grow by 6 times and resolution by 2 times 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 news APIs in order to predict their effect in the stock market
- **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
- **Chicago Crime Analysis:** Analyzed Chicago crime rate over 15 years of police data was able to find an explanation for the recent increase in the city's homicide rate and its relation to other police activities
- **Detector Data Calibration:** Performed data calibration using statistical methods to adjust latest models of antarctic ice
- **Teaching Programing:** Taught Python and machine learning to graduate students and post-doctoral researchers

## EDUCATION

**University of Wisconsin-Madison**

Ph.D., Physics - Data Science

Madison, WI  
expected July 2018

**Leiden University**

M.S., Physics - Computational

Leiden, NL  
January 2014

**Sharif University of Technology**

B.S., Physics

Tehran, IR  
July 2011