

# Prashanth Shanmuganathan, PhD

hello@sprashanth.com  
330-906-2019

www.sprashanth.com  
github.com/prashanthgit  
linkedin.com/in/sprashan

**6 years of extensive experience in big data analysis and software tool development in collaborative environment.**

## Skills

**Programming:** C/C++, Python, BASH, Perl

**Tools:** Jupyter, Numpy, Pandas, Scikit-learn, Seaborn, Matplotlib, plotly, Git, pytest

**Web Development:** Flask, HTML, XML, JavaScript, PHP, jqplot, RESTfull/ JSON

**Database:** MySQL

**Scientific Applications:** MATLAB, ROOT, GEANT

**Other:** Windows/Linux/Mac OS, Microsoft Office, Distributed Computing

## Experience

### Lehigh University/ Brookhaven National Laboratory

2016 - present

#### Postdoctoral Researcher

- Played a critical role in new (\$ 300 k) detector R&D, integration and commission
- Serving as detector expert and software coordinator
- Database maintenance for detector calibration and complex mapping
- Software peer review and maintenance
- Deployed automated online tools to monitor detector data quality
- Developed Monte Carlo simulation tools to study detector responses

### Kent State University / Brookhaven National Laboratory

2010 – 2016

#### Graduate Student

- Developed C++ software framework to analyze large scale data
- Used Linux clusters with hundreds of cores to process three years of nuclear collision data (~3 PB)
- Performed quantitative research to isolate rare particles from large data set
- Discovered new correlation between particles with centrality of nuclear collision
- Cleaned STAR collaboration records from past several years and re-structured MySQL database for key/value pair data representation model
- Developed modular and scalable RESTful API to sustain STAR collaboration's software tools
- Optimized presentation distributions among members using robust statistical analysis

## Education

Ph.D. High-energy nuclear physics – Kent State University, Ohio

2010 – 2016

B.Sc. Physics (First Class Honors, Gold medal) – University of Colombo, Sri Lanka

2005 – 2009

### Courses and Certifications

- Machine learning, Andrew Ng, Stanford University
- Python for data science and ML boot camp, Udemy
- Sun certified JAVA programmer (SCJP 1.4) – 84%

