

Shanavas K. Veedu, PhD

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EXECUTIVE SUMMARY

Data scientist with research experience in theoretical physics. Experience in machine learning with python and R. Predictive models from gigabytes of computational data. Experience in quantitative modeling, simulations, and data visualization.

EXPERIENCE

Postdoctoral Fellow **Oak Ridge National Lab, Oak Ridge, TN** **2014** **2016**

- Developed materials for clean energy technologies with high-throughput analysis of over 5000 systems, in collaboration with industry partners
- Predicted physical properties from multidimensional simulation data using Octave

Postdoctoral Fellow **University of Missouri, Columbia, MO** **2011** **2014**

- Developed analytical models of microscopic interactions in strongly correlated materials with Mathematica and Python

Staff Scientist **Bhabha Atomic Research Center, Mumbai, India** **2002** **2011**

- Studied phase transition processes using statistical models based on computer simulations
- Setup of a super-computer facility based on Beowulf cluster architecture

TRAINING

Bit Bootcamp on Data Science, New York, NY **2016**

- Project: Topic modeling of lecture videos using wikipedia corpus (heroku web app: <https://goo.gl/3FBDTH>), uses Naive Bayes and NMF algorithms from scikit-learn in python
- Mini projects: decision tree to identify customer defaults on credit cards, k-means clustering to identify patterns in earth-quakes, random forest to predict customer churn, gradient boosted machine to classify wines, collaborative filtering to build recommendation engines

EDUCATION

PhD in Physics **Homi Bhabha National Institute, Mumbai, India** **2011**

- Thesis: “Classical and quantum simulations of novel functional materials”, advisors: Prof. Indra Dasgupta (IIT, Mumbai) and Dr. Surinder M. Sharma (BARC, Mumbai)

M. Sc. in Physics **Indian Institute of Technology, Madras, India** **2002**

- Master’s thesis: “Artificial neural networks”, advisor: Prof. Neelima Gupte

PUBLICATIONS & PRESENTATIONS

- Editorial board member for Journal for Postdoctoral Research; 27 published articles in scientific journals and over 20 articles peer-reviewed for top scientific journals; 13 presentations at professional organizations and 2 invited talks
- Co-inventor for invention disclosures DOE S-138,229 (David S. Parker, [Shanavas K. Veedu](#)) and DOE S-138,307 (B. S. Conner, M. A. McGuire, [Shanavas K. Veedu](#), P. S. David, B. C. Sales) submitted for US patent.

SKILLS

- Analytical and statistical models in Mathematica and Matlab (Octave); programming in Python, R, Fortran 90, C++, Bash, SQL and LaTeX
- App development with electron framework. (github.com/shanavaskv/crystella)
- Machine learning with scikit-learn and h2o, natural language processing with gensim, nltk