JAYANTI PRASAD PH.D

Khagol 20, 38/1 Panchvati, Pashan, Pune (INDIA) - 411008
(+91)9765977566 ⋄ prasad.jayanti@gmail.com ⋄ Web: LinkedIn Medium GitHub

EDUCATION

Harish-Chandra Research Institute, Allahabad *2002 - 2009*
Ph. D (Physics [Astronomy & Astrophysics])

H. N. B. Garhwal University Srinagar Garhwal (Uttarakhand) *1999 - 2000*
B. Ed (Diploma in Education) 62.0%

H. N. B. Garhwal University Srinagar Garhwal (Uttarakhand) *1996 - 1998*
M. Sc (Physics [Electronics & Communication]) 72.5%

H. N. B. Garhwal University Srinagar Garhwal (Uttarakhand) *1993 - 1996*
B. Sc (Physics & Mathematics) 62.5 %

U. P. Board Allahabad (UP) *1991 - 1993*
Intermediate (Physics, Chemistry & Mathematics) 69.0 %

WORK EXPERIENCE

Freelancer *Nov 2019 - Present*
Data Scientist (developing courses on Machine Learning)

Embold Technologies GmbH. *July 2018 - Oct 2019*
Data Scientist (Worked on a Recommendation System)

IUCAA, Pune *July 2016 - July 2018*
Consultant System Administrator (LIGO Project)

CMS, SPPU Pune *Aug 2015 - June 2016*
Research Scientist (DST-SERB Young Scientist)

IUCAA, Pune *Oct 2013 - Aug 2015*
Research Scientist (DST-SERB Young Scientist)

IUCAA, Pune *Aug 2010 - Oct 2013*
Post Doctoral Fellow

NCRA (TIFR), Pune *May 2008 - Aug 2010*
Post Doctoral Fellow

PROJECTS

Data Science & Machine Learning

Recommendation Systems, Machine Learning on Source Code, LSTM Networks, Sequence to Sequence Models, Particle Swarm Optimization, Maximum Entropy Deconvolution, Automatic Flagging and Calibration of Radio Astronomical Data, Markov-Chain Monte Carlo.

Astronomy & Astrophysics

Galaxy formation, Galaxy clustering, Cosmological N-body simulations, Radio observations and data analysis with the GMRT data, Cosmic Microwave Background, Early Universe, Gravitational Waves, Astronomical software development.

COMPUTING & SOFTWARE SKILLS

Linux	User, Sysadmin, Network Manager
Python	Numpy, Pandas, Scipy, Matplotlib, jupyter, iPython, regex
Fortran	Fortran 77, Fortran 90
C & C++	Basic Data Structure & Algorithms
Parallel Computing	MPI, OpenMP, Cuda, Multi-threading, Multi-Processing
Gid Computing	Globus, Condor, Pegasus
Version Control System	Git
Web	HTML, CSS, JavaScript, php
Scripting	Bash, Sed, Awk, grep
Libraries	LAPACK, BLAS, CFITSIO, GSL, HDF
Database	MySql, MongoDB
Documentation	LaTex, Keynote, MS-WORD, MS-PPT
Cloud	Amazon AWS, Google Colab
Misc	Docker, Elasticsearch, GitHub

MACHINE LEARNING

Frameworks	Tensorflow, Keras, Scikit-Learn, PyTorch
Algorithms	Linear and Logistic Regression, Nearest Neighbours, SVM, Decision Tress, Naive Bayes
Deep Learning	ANN, RNN, CNN, LSTM, GRU, Encoder-Decoder
NLP Tools	Spacy, NLTK, Stanford Core-NLP, Glove, Word2Vec
Ensemble Learning	Bagging, Boosting and Random Forest

AWARDS AND RECOGNITION

- An invited course instructor for the **6th International Winter School on Big Data 2020** , Ancona, Italy
- **Special Breakthrough Prize In Fundamental Physics 2016** (with the LIGO Scientific Collaboration) Awarded For Detection Of Gravitational Waves 100 Years After Albert Einstein Predicted their Existence [Received prize money of INR 126,000]
- **2016 Gruber Cosmology Prize** to Rainer Weiss, Kip Thorne, Ronald Drever, and the entire **LIGO team** for pursuing a vision to observe the universe in gravitational waves, leading to a first detection that emanated from the collision of two black holes.
- A **Fast Track Research** grant [INR 22,10,000] from the **Science & Engineering Research Board (SERB)**, Government of India, SR/FTP/PS-102/2012
- Indo-US Science and Technology Forum (IUSSTF) grant for a two month (Sep 15, 2012 to Nov 15, 2012) long visit of USA (Caltech)
- **CSIR-UGC NET (Dec 2000):** Cleared the **National Eligibility Test (NET)** for determining the eligibility for lectureship and for the award of Junior Research Fellowship (JRF) conducted by the University Grant Commission (UGC) and the Council of Scientific and Industrial Research (CSIR) of India

- **JEST (2001):** Obtained 97.3 percentile score in the **Joint Entrance Screening Test (JEST)** conducted by major research institutes in India for Ph.D a programs.

PUBLIC MEDIA

- **Rudraprayag scientist does state proud**
  - *The Tribune, Dehradun, Feb 28, 2016.*
- **Jayanti Prasad to be honored by PAHAL**
  - *Daily Pioneer, Sunday, 28 Feb 2016* — PNS — Dehradun — in Dehradun
- **IUCAA researchers get Special Breakthrough Prize for detection of gravitational waves**
  - *Indian Express, Pune, Dec 5, 2016*
- **9 astronomers from city bag Breakthrough Prize**
  - *Sakal Times, Pune, Thursday, 5 May 2016*
- **LIGO detects gravitational waves for a third time**
  - *India Today, Jan 02, 2017*
- **IUCAA scientists contributed most to country's share**
  - *Times of India, Pune, Oct 17, 2017*

TEACHING & TRAINING

Students Supervised

☐ Mr. Sudip Mahajan (2019), Pune Institute of Computer Technology, Pune (Master of Engineering thesis), *Learning semantically rich representation of code for clone detection.*

☐ Ms. Pranati Dalavi (2016), Fergusson College Pune (M.Sc. Physics final year thesis), *Optimization techniques and CMB data analysis.*

☐ Mr. Harsh Prajapati (2016), Institute of Engineering and Technology, Ahmedabad University, Navrangpura, Ahmedabad 380009, India (B. Tech final year project), *Reconstructing primordial power spectra with WMAP 9 and Planck data with Singular Value Decomposition.*

Courses given

☐ *Big Code*, Invited speaker for the **6th International Winter School on Big Data**, Ancona, Italy - January 13-17, 2020.

☐ *Cosmic Microwave Background (CMB) - 3 lectures*, Autumn School on Cosmology in BITS Pilani, Pilani, India (Nov 07-09, 2013). https://www.youtube.com/watch?v=cWFa168OVoE.

☐ *High Performance Computing (2011) - 4 Lectures*, Inter-University Centre for Astronomy & Astrophysics (IUCAA), Pune, Indi

WORKSHOPS & MEETINGS

Talks & Presentation

☐ *Gravitational Waves and LIGO India*, OSG All Hands Meeting 2017 San Diego Supercomputer Center (SDSC) at UC San Diego (March 06 - 09, 2017).

☐ Public Talk : *Discovering Gravitational Waves with LIGO*

- Institute of Bioinformatics & Biotechnology, Savitribai Phule Pune University, Pune (Feb 28, 2016).
- Centre for Modeling & Simulation (CMS), Savitribai Phule Pune University, Pune (March 04, 2016).
- Maharashtra Institute of Technology, Pune (March 08, 2016).

- DOR (A forum of NCL Pune Volunteers), Pagdandi - Books Chai Cafe., Pune.

Meetings attended

☐ School on Parallel Computing and Applications, Institute of Mathematical Sciences, Chennai, India (Jan 07-14, 2005).
☐ Summer School NOVICOSMO 2005, Novigrad, Croatia (Sept 05-17, 2005).
☐ Summer School in Cosmology and Astroparticle Physics, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (July 10-28, 2006).
☐ Course on Linux Systems, Network and Advanced Administration, Conducted by Linux Learning Center Bangalore at HRI Allahabad (2007, May).
☐ Performance Enhancement on Emerging Parallel Processing Platforms (PEEP-2008), IUCAA, Pune, (Sept 2008).
☐ Heterogeneous Computing - Many Core/ Multi-GPU - Performance of Algorithms, Application Kernels, CMSD, University of Hyderabad, Hyderabad, India (Oct 17-21, 2011).
☐ IEEE International Conference on High Performance Computing (HiPC), Hotel Le Meridian, Pune, India (Dec 17-21, 2012)
☐ LSC-Virgo March 2017 Meeting, Pasadena, California, USA (March 12-17, 2017).
☐ OSG All Hands Meeting, San Diego Supercomputer Center, UCSD, California, USA (March 06-09, 2017)

TOP FIVE PUBLICATIONS

[*Full publication list is available separately or can be found on Google Scholar*]

1 **Jayanti Prasad** and Jayaram Chengalur, Exper. Astron (2012), **33**, 157 [astro-ph.IM/1111.6415]
FLAGCAL:A flagging and calibration package for radio interferometric data

2 **Prasad Jayanti** and Souradeep Tarun, Phys. Rev. D (2012) **85**, 123008, [astro-ph.CO/1108.5600]
Cosmological parameter estimation using Particle Swarm Optimization (PSO)

3 Gaurav Goswami and **Jayanti Prasad**, Phys. Rev. D (2013)**88**, 023522, [arXiv:1303.4747]
Maximum Entropy deconvolution of Primordial Power Spectrum

4 Bagla, J. S. and **Prasad, Jayanti** (2006), MNRAS, **370**, 993, [astro-ph/0601320]
Effects of the size of cosmological N-Body simulations on physical quantities – I: Mass Function.

5 The LIGO Scientific Collaboration and the Virgo Collaboration(2016)
Phys. Rev. Lett. **116**, 061102, [arXiv:1602.03837 [gr-qc]]
Observation of Gravitational Waves from a Binary Black Hole Merger

> `The first direct observation of gravitational waves on 14 September 2015 by the LIGO and Virgo collaborations. This discovery started a new frontier in Astronomy and was recognized with Nobel Prize in Physics (2017) to three lead members of the collaboration and the Special Breakthrough Prize in Fundamental Physics (2016) to the full collaboration.`

PREPRINTS UNDER REVIEW

1 Gaurav Goswami, **Jayanti Prasad**, Mansi Dhuria, [arXiv:2004.07750 [q-bio.PE]]
Extracting the effective contact rate of COVID-19 pandemic

PERSONAL DATA

Date of Birth	June 30, 1977
Sex	Male
Nationality	Indian
Marital Status	Married

SIGNATURE

Jayanti Prasad April 18, 2020