

Workshop Closeout

17 January 2025



Chief Patron

Prof. B. J. Rao
Hon. Vice Chancellor
University of Hyderabad

Special Invitee

Prof. M. Ghanashyam Krishna
IOE Director
University of Hyderabad

Organizing Committee

Prof. M. Ghanashyam Krishna, UoH
Prof. James Raju , UoH
Prof. Samrat Sabat, UoH
Prof. Nageswara Rao, UoH
Prof. Rukmani Mohanta, UoH
Prof. Soma Sanyal, UoH
Dr. Bhawna Gomber , UoH
Dr. Pratap Kollu, UoH
Dr. Anjali Priya, UoH
Dr. David Lange, Princeton University, USA
Dr. Peter Elmer, Princeton University, USA
Prof. Rafael Coelho Lopes de Sa, UMass-Amherst, USA
Prof. Verena Martinez Outschoorn, UMass-Amherst, USA

HSF-INDIA HEP SOFTWARE

WORKSHOP

January 13th to 17th, 2025
Centre for Advanced Studies in
Electronics Science and Engineering
School of Physics
University of Hyderabad, Hyderabad, India

Topics

Scientific Python
Parallel Programming & GPUs
Basics of Machine Learning
Real-time triggering software

The workshop primarily targets
masters & early stage PhD students

Registration

<https://indico.cern.ch/event/1394564/>

Deadline: November 1, 2024



HSF

HEP Software Foundation

The HSF-India project aims to promote
the development of international
research software collaborations. This
is the fifth in a series of workshops for
software and data analysis skills
essential for doing research software
in physics.

Conveners



Dr. Bhawna Gomber
(bhawna.gomber@cern.ch)
Dr. David Lange
(David.lange@cern.ch)

Sponsored by IOE,
University of Hyderabad
and HSF-India. (NSF / USA)



OISE-2201990



INSTITUTION OF EXCELLENCE
National Honor, Global Standards
Research Software
UNIVERSITY OF HYDERABAD



Finding our materials later

This week was a rapid introduction to a lot of (potentially) new concepts. We encourage you to continue using these materials to build your skills.

We organized everything into a single github area:

<https://github.com/hsf-india-january2025>

This is also linked from the Indico page. <https://indico.cern.ch/event/1394564>

All material will continue to be accessible!

Your access to the binderhub links will continue for at least a few weeks (maybe longer). Feel free to use them to go through courses again. Please contact us with any problems

We are happy to answer follow-up questions on any topic.

Other compute resources that you can use to keep going

1. Your laptop. Limitations: it might be low power/memory, likely no NVidia GPU
2. Browser based python distributions (aka, WASM). Limitations: limited set of Python packages currently supported; no GPU
 - a. <https://jupyterlite.github.io/demo/lab/index.html>
 - b. <https://marimo.app/>
3. Google colab (<https://colab.research.google.com>) Limitations limited resource usage before it is not free
4. Swan (swan.cern.ch) and Ixplus. Limitations: CERN account required

7 repositories

MachineLearning Public

Jupyter Notebook ·  0 ·  0 ·  0 ·  0 · Updated 20 hours ago

ManagingSoftware Public

Jupyter Notebook ·  0 ·  0 ·  0 ·  0 · Updated 2 days ago

GPUCuda Public

Cuda ·  0 ·  1 ·  0 ·  0 · Updated 2 days ago

ScientificPython Public

How to analyze particle physics data using arrays in Python

Jupyter Notebook ·  BSD 3-Clause "New" or "Revised" License ·  1 ·  0 ·  0 ·  0 · Updated last week

IrisHepAnalysis Public

 0 ·  0 ·  0 ·  0 · Updated last week

HSF-India program

Our project aims to build international research software collaborations between US, European, and India based researchers to reach the science goals of experimental particle, nuclear and astroparticle research.

- Given the growing complexity of our scientific data and collaborations, these collaborations are increasingly important to raise the collective productivity of our research community.
- It is intended as a long-term investment in international team science.

<https://research-software-collaborations.org/>

Public mailing lists

To receive announcements regarding the HSF-India project and other activities to build research software collaborations, please subscribe to the

rsc-announcements@googlegroups.com mailing list

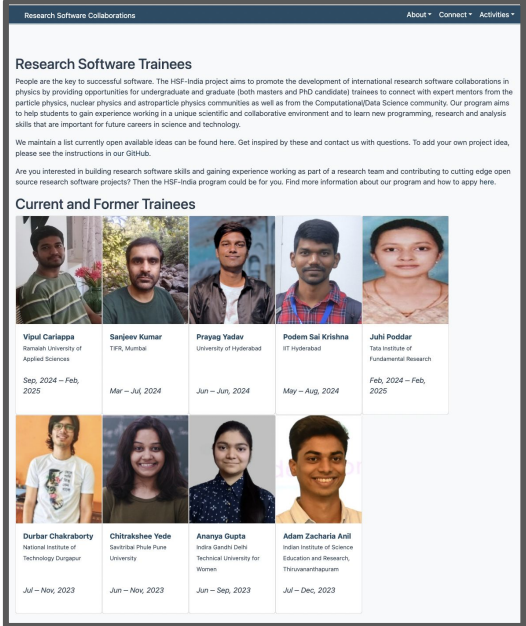
HSF-India Program Activities

We plan to continue these workshops, both in this form and as more advanced/specialized versions.










- Maybe some of you will come back as instructors/tutors

We also run remote 3-6 month research traineeships. The idea of these is to match up students, faculty/staff in India and faculty/staff in US/Europe. Our program for 2025 will open in early spring.

- <https://research-software-collaborations.org/trainees.html>
- We are happy to help and try to match interested students with research projects. It is best that you have a connection with a faculty in India and some general research topic that is of interest (and connected with our program)



The screenshot shows the 'Research Software Collaborations' website. At the top, there are navigation links for 'About', 'Connect', and 'Activities'. Below the header, the text reads: 'Research Software Trainees' and 'People are the key to successful software. The HSF-India project aims to promote the development of international research software collaborations in physics by providing opportunities for undergraduate and graduate (both masters and PhD candidate) trainees to connect with expert mentors from the particle physics, nuclear physics and astroparticle physics communities as well as from the Computational/Data Science community. Our program aims to help students to gain experience working in a unique scientific and collaborative environment and to learn new programming, research and analysis skills that are important for future careers in science and technology.' Below this, there is a section titled 'Current and Former Trainees' which displays a grid of trainee profiles. Each profile includes a photo, the trainee's name, their affiliation, and their training period.

Current and Former Trainees				
 Vijay Cariappa Ramesh University of Applied Sciences Sep, 2024 – Feb, 2025	 Sanjeev Kumar TFR, Mumbai Mar – Jul, 2024	 Prayag Yadav University of Hyderabad Jun – Jun, 2024	 Podem Sai Krishna IT Hyderabad May – Aug, 2024	 Juli Poddar Tata Institute of Fundamental Research Feb, 2024 – Feb, 2025
 Durbar Chakraborty National Institute of Technology Durgapur Jul – Nov, 2023	 Chitrakshya Yede Savitribai Phule Pune University Jun – Nov, 2023	 Ananya Gupta Indira Gandhi Delhi Technical University for Women Jun – Sep, 2023	 Adam Zacharia Anil Indian Institute of Science Education and Research, Thiruvananthapuram Jul – Dec, 2023	

Bidirectional Research Visit Opportunity

We are also interested in facilitating “research visits” and can support travel costs for 1-3 months for an individual to work directly with another research group on a software (development) topic.

Who can we support?

- Researchers affiliated to a US university/lab to visit in India
- Researchers affiliated to a university/lab in India to visit a US institution [or to CERN to work with a US affiliated group]

We are interested to talk with anyone about either project or host offers or interest in doing an exchange.

Teamwork and Collaborations!



Feedback Survey (anonymous)

https://docs.google.com/forms/d/e/1FAIpQLSfpGhhCbdCMib-xaVnV9jgFggDkE5A7ai_g5BHCpH8wzdBahw/viewform?usp=header

(Link also distributed in Slack)

Please take a few minutes now to fill out the feedback survey. It is anonymous (does not collect email addresses) and the comments help us prepare further iterations of these types of training workshops.

Thanks to the local organizers and team here
at UoH for organizing this very nice event!



And thanks to everyone for attending
(and all your hard work)!!



Full Google Photo Album
will be announced in Slack.

