



Welcome to HSF-India Software Workshop @ DU

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DR. DAVID LANGE (HSF-INDIA LEAD)

Sponsored By :
HSF-India Project
&
University of Delhi

Department of Physics & Astrophysics

University of Delhi

May 20, 2024 – May 24, 2024

Program In a Nutshell

- **Duration** : 20 May – 24 May in 10 Sessions
- **Venue** : Room 512, 5th floor, Maharishi Kanad Bhawan, University of Delhi
- Tea/Coffee + Snacks (Everyday 2 times) & Lunch (Every day except Thursday) → Room 513
- Lunch on Thursday (23 May) will be at University Guest House
- Banquet dinner, Friday : DRDO Guest House (<https://maps.app.goo.gl/1FxJ8XRXiNxJeZBP8>)
 - Trying to arrange a bus to take you at location.
- Will have a workshop photo on May 23 before lunch
- Collect your participation certificate : will be available from May 24 Morning.

Agenda of Workshop

- Indico Link : <https://indico.cern.ch/e/hsf-india-delhi2024>

The screenshot displays the Indico agenda for the workshop, organized by day and session type. The interface is split into two panels for Monday, 20 May and Tuesday, 21 May.

Monday, 20 May

- 10:00 → 13:00 Morning Session**
 - 10:00 Welcome and logistics** (45m) - Speakers: Arun Kumar (University of Delhi (IN)), Ashutosh Bhardwaj (University of Delhi (IN)), David Lange (Princeton University (US))
 - 10:45 HEP Software and Data Analysis** (1h 30m) - Speaker: Rafael Coelho Lopes De Sa (University of Massachusetts (US))
 - 12:15 Introductory Exercises** (45m) - Speaker: David Lange (Princeton University (US))
- 14:00 → 18:00 Afternoon Session**
 - 14:00 Modern C++** (1h 30m) - Speaker: David Lange (Princeton University (US)) - Includes a Notebook link.
 - 15:30 Break** (30m)
 - 16:00 Modern C++** (1h 30m) - Speaker: David Lange (Princeton University (US))

Tuesday, 21 May

- 09:30 → 13:00 Morning Session**
 - 09:30 Parallel Programming** (1h 30m) - Speaker: Philip Chang (University of Florida (US))
 - 11:00 Break** (30m)
 - 11:30 GPU programming** (1h 30m) - Speaker: Philip Chang (University of Florida (US))
- 14:00 → 17:30 Afternoon Session**
 - 14:00 GPU programming** (2h) - Speaker: Philip Chang (University of Florida (US))
 - 16:00 Break** (30m)
 - 16:30 Landscape of Research Software In Physics** (1h) - Speaker: Peter Elmer (Princeton University (US))

- Today after tea : Introductory talks by Rafael on Software and data analysis for HEP & David will introduce the exercises.
- In Afternoon: sessions on C++
- Tomorrow: Focus on GPU and Parallel programming & Talk by Peter on future of research software in Physics

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WEDNESDAY, 22 MAY

09:30 → 13:00 Morning Session

09:30 **Scientific Python** 11 1h 30m
Speaker: Jim Pivarski (Princeton University)
slides & exercises

11:00 Break 30m

11:30 **Scientific Python** 1h 30m
Speaker: Jim Pivarski (Princeton University)
slides & exercises

14:00 → 18:00 Afternoon Session

14:00 **Introduction to Machine Learning** 1h 30m
Speaker: Gordon Watts (University of Washington (US))

15:30 Break 30m

16:00 **Machine Learning Techniques and Applications** 1h 30m
Speaker: Prof. Christopher Tunnell (Rice University)

THURSDAY, 23 MAY

09:30 → 13:00 Morning Session

09:30 **Scientific Python** 1h 30m
Speaker: Jim Pivarski (Princeton University)
slides & exercises

11:00 Break 30m

11:30 **Scientific Python** 1h 30m
Speaker: Jim Pivarski (Princeton University)
slides & exercises

14:00 → 18:00 Afternoon Session

14:00 **Machine Learning Techniques and Applications** 1h 30m
Speaker: Gordon Watts (University of Washington (US))

15:30 Break 30m

16:00 **Machine Learning Techniques and Applications** 1h 30m
Speaker: Prof. Christopher Tunnell (Rice University)

Wednesday & Thursday are the days of Python and Machine Learning

Agenda of Workshop

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Time	Session Title	Speaker	Duration
FRIDAY, 24 MAY			
09:30 → 13:00 Morning Session			
09:30	Scientific Python with GPUs	Ianna Osborne (Princeton University)	1h 30m
11:00	Break		30m
11:30	Scientific Python with GPUs	Ianna Osborne (Princeton University)	1h 30m
14:00 → 18:00 Afternoon Session			
14:00	Introduction to Continuous Integration Techniques	Jim Pivarski (Princeton University)	1h
	intro-talk	my-cool-package	
15:00	Introduction to using Containers and Virtual Environments	Gordon Watts (University of Washington (US))	1h
16:00	Break		30m
16:30	Wrapup Session		30m
19:00 → 22:00 Dinner			

- Conclude workshop with Sessions on Python with GPUs and discussion on CI and Containers.
- Wrap up on Friday
- Banquet dinner on Friday evening

Points of Communication & Other Information

- We have Whatsapp group for announcements. Please join if you haven't already <https://chat.whatsapp.com/EpGGX7VngTYL0swRdv7r20>
- Don't hesitate to contact us in case of any issues :
 - Arun (Myself) : 9188800099
 - Yunus (Staff) : 9873105433
- For students getting financial support :
 - Keep your receipts of payments at accommodation and travel tickets
- Delhi is HOT these days so keep yourself hydrated, use sunscreen and sunglasses.