

Welcome to the

LPA Special Workshop on
Intelligent Systems



Workshop schedule

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

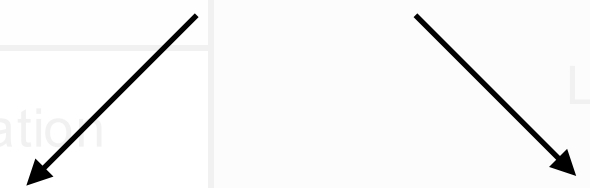
	13.01	14.01	15.01	16.01	17.01				
	Monday	Tuesday	Wednesday	Thursday	Friday				
9	Arrivals	Hands-On Deep Learning with PyTorch I	Morning Discussions	Hands-On Bayesian Optimization with BoTorch I	Morning Discussions	Hands-On LASY	THRILL Contributed Session I	Bus to CLF (departure at 9:00)	
10		Tea Break		Tea Break		Tea Break		EPAC Visit	
11		Hands-On Deep Learning with PyTorch II	Trends in LPA Electron Automation	Hands-On Bayesian Optimization with BoTorch II	Trends in LPA Ion Automation	Hands-On Compressed Sensing	THRILL Contributed Session II		
12		Lunch Break		Lunch Break		Lunch Break			
13		Arrivals and Registration	Lunch Break		Lunch Break		Lunch Break		Lunch at CLF
14		Greetings & Introduction Alec Thomas	Ryan Roussel (SLAC) Chris Eberle (LMU)		Matt Hill (LLNL) Jeffrey Kelling (HZDR)		Vincent Deo (Subaru Telescope) Dimitris Papadopoulos (APOLLON) Marko Von der Leyen (Oxford)		Bus back to Oxford (back by 14:30)
15	Vincent Bagnoud	Tea Break		Tea Break		Tea Break		Departures	
16	Sunny Howard (Oxford / LMU) Archis Joglekar (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DESY)		Kathryn Baker (ISIS)		MLST Perspective	THRILL Contributed Session III		
17		Panel discussion		Panel discussion		THRILL Discussion Panel			
18	Poster Session								
19		Conference Dinner							
20									
21	Inofficial meeting at Pubs around		Inofficial meeting at Pubs around	Inofficial meeting at Pubs around					

Workshop schedule | Plenaries

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

	13.01	14.01	15.01	16.01	17.01
	Monday	Tuesday	Wednesday	Thursday	Friday
9		Hands-On Deep Learning with PyTorch I	Hands-On Bayesian Optimization with BoTorch I	Hands-On LASY	Bus to CLF (departure at 9:00)
10		Morning Discussions	Morning Discussions	THRILL Contributed Session I	EPAC Visit
11	Arrivals	Tea Break	Tea Break	Tea Break	
12		Hands-On Deep Learning with PyTorch II	Hands-On Bayesian Optimization with BoTorch II	Hands-On Compressed Sensing	
13	Arrivals and Registration	Lunch Break			Lunch at CLF
14	Greetings & Introduction Alec Thomas	Ryan Roussel (SLAC) Chris Eberle (LMU)	Matt Hill (LLNL) Jeffrey Kelling (HZDR)	Vincent Deo (Subaru Telescope) Dimitris Papadopoulos (APOLLON) Marko Von der Leyen (Oxford)	14:30
15	Vincent Bagnoud				
16	Tea Break	Tea Break	Tea Break	Tea Break	Departures
17	Sunny Howard (Oxford / LMU) Archis Joglekar (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DESY) Panel discussion	Kathryn Baker (ISIS) Panel discussion	MLST Perspective THRILL Discussion Panel	
18	Poster Session				
19					
20					
21	Inofficial meeting at Pubs around		Inofficial meeting at Pubs around	Inofficial meeting at Pubs around	

Different rooms (follow signs)



These are the events we stream!

30 minutes talk + 15 minutes for discussion: **ask questions!**

Workshop schedule | Poster session

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

	13.01	14.01	15.01	16.01	17.01	
	Monday	Tuesday	Wednesday	Thursday	Friday	
9	Arrivals	Hands-On Deep Learning with PyTorch I	Hands-On Bayesian Optimization with BoTorch I	Hands-On LASY	Bus to CLF (departure at 9:00)	
10		Morning Discussions	Morning Discussions	THRILL Contributed Session I	EPAC Visit	
11		Tea Break	Tea Break	Tea Break		
12		Hands-On Deep Learning with PyTorch II	Trends in LPA Electron Automation	Hands-On Bayesian Optimization with BoTorch II		Hands-On Compressed Sensing
13		Arrivals and Registration	Lunch Break	Lunch Break	Lunch Break	Lunch at CLF
14		Greetings & Introduction Alec Thomas	Ryan Roussel (SLAC) Chris Eberle (LMU)	Matt Hill (LLNL) Jeffrey Kelling (HZDR)	Vincent Deo (Subaru Telescope) Dimitris Papadopoulos (APOLLON) Marko Von der Leyen (Oxford)	EPAC Visit
15		Vincent Bagnoud	Tea Break	Tea Break	Tea Break	
16	Sunny Howard (Oxford / LMU) Archis Joglekar (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DESY)	Kathryn Baker (ISIS)	THRILL Discussion Panel		
17	Panel discussion	Panel discussion	Panel discussion	Panel discussion		
18	Poster Session					
19						
20						
21	Inofficial meeting at Pubs around					

Time to set up your posters
 (Simpkins Lee Room, next to coffee break / registration)

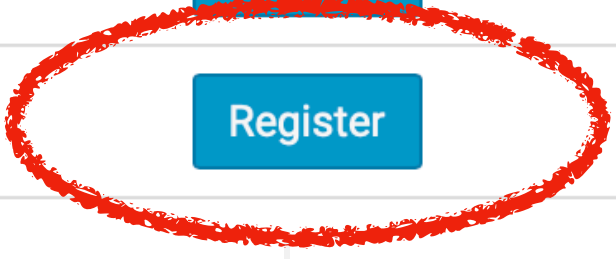
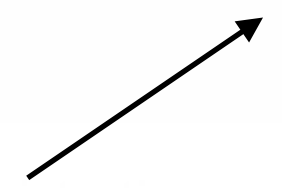


Workshop schedule | Tutorials

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

	13.01 Monday	14.01 Tuesday	15.01 Wednesday	16.01 Thursday	17.01 Friday																				
9		Hands-On Deep Learning with PyTorch I	Hands-On Bayesian Optimization with BoTorch I	Hands-On LASY	Bus to CLF (departure at 9:00)																				
10																									
11		Hands-On Deep Learning with PyTorch II	Hands-On Bayesian Optimization with BoTorch II	Hands-On Compressed Sensing																					
12																									
13																									
14	Greetings & Introduction Alec Thomas	Registration Available forms <table border="1"> <thead> <tr> <th></th> <th>Opens</th> <th>Closes</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>On-site Participation</td> <td>1 Aug 2024, 00:00</td> <td>15 Nov 2024, 23:59</td> <td>👤 111</td> <td>Check details</td> </tr> <tr> <td>Remote Participation</td> <td>1 Dec 2024, 00:00</td> <td>12 Jan 2025, 23:59</td> <td>👤 57</td> <td>Register</td> </tr> <tr> <td>Tutorial Registration</td> <td>1 Dec 2024, 00:00</td> <td>13 Jan 2025, 23:59</td> <td></td> <td>Register</td> </tr> </tbody> </table>					Opens	Closes			On-site Participation	1 Aug 2024, 00:00	15 Nov 2024, 23:59	👤 111	Check details	Remote Participation	1 Dec 2024, 00:00	12 Jan 2025, 23:59	👤 57	Register	Tutorial Registration	1 Dec 2024, 00:00	13 Jan 2025, 23:59		Register
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18																									
19	Poster Session																								
20		Conference Dinner																							
21	Inofficial meeting at Pubs around		Inofficial meeting at Pubs around	Inofficial meeting																					

Next to registration



Workshop schedule | Contributed Talks

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

	13.01	14.01	15.01	16.01	17.01
	Monday	Tuesday	Wednesday	Thursday	Friday
9					Bus to CLF (departure at 9:00)
10				THRILL Contributed Session I	
		Tea Break	Tea Break	Tea Break	
11	Activities	Hands-On Deep Learning with PyTorch II	Hands-On Bayesian Optimization with BoTorch II	Hands-On Compressed Sensing	EPAC visit
12		Trends in LPA Electron Automation	Trends in LPA Ion Automation	THRILL Contributed Session II	
13		Lunch Break	Lunch Break	Lunch Break	
14	Greetings & Introduction Alec Thomas	Ryan Roussel (SLAC) Chris Eberle (LMU)	Matt Hill (LLNL) Jeffrey Kelling (HZDR)	Vincent Deo (Subaru Telescope) Dimitris Papadopoulos (APOLLON) Marko Von der Leyen (Oxford)	
15	Vincent Bagnoud				
				Tea Break	
16	Sunny Howard (Oxford / LMU) Archis Ingolekar (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DFSY)	Kathryn Baker (ISIS)	MLST Perspective	THRILL Contributed Session III
17				Discussion Panel	Departures
18					
19					
20					
21	Inofficial meeting at Pubs around	Conference Dinner	Inofficial meeting at Pubs around	Inofficial meeting at Pubs around	

Workshop schedule | Discussions

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

	13.01	14.01	15.01	16.01	17.01
	Monday	Tuesday	Wednesday	Thursday	Friday
9		Hands-On Deep Learning with PyTorch I	Hands-On Bayesian Optimization with BoTorch I		Bus to CLF (departure at 9:00)
10		Morning Discussions	Morning Discussions	THRILL Contributed Session I	
		Tea Break	Tea Break		
11		Trends in LPA Electron Automation	Trends in LPA Ion Automation	THRILL Contributed Session II	
12					
13					
14					
15					
16		Chetanya Jain (LBNL) Andreas Maier (DESY)	Kathryn Baker (ISIS)		
17		Panel discussion	Panel discussion	THRILL Discussion Panel	
18	Poster Session				
19					
20		Conference Dinner			
21	Inofficial meeting at Pubs around		Inofficial meeting at Pubs around	Inofficial meeting at Pubs around	

Workshop schedule | Discussions

(Mostly) Tuesday

Diagnostics
Feedback, Tuning & Optimization

Control System Interfaces
Storage & Data Access

(Mostly) Wednesday

Laser

Experiment

Facility

Workshop schedule | Special Issue

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

	13.01	14.01	15.01	16.01	17.01	
	Monday	Tuesday	Wednesday	Thursday	Friday	
9	Arrivals	Hands-On Deep Learning with PyTorch I	Hands-On Bayesian Optimization with BoTorch I	Hands-On LASY	Bus to CLF (departure at 9:00)	
10		Morning Discussions	Morning Discussions	THRILL Contributed Session I	EPAC Visit	
11		Tea Break	Tea Break	Tea Break		
12		Hands-On Deep Learning with PyTorch II	Hands-On Bayesian Optimization with BoTorch II	Hands-On Compressed Sensing		THRILL Contributed Session II
13		Arrivals and Registration	Lunch Break	Lunch Break	Lunch Break	Lunch at CLF
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15	Vincent Bagnoud	Tea Break	Tea Break	Tea Break	Departures	
16	Sunny Howard (Oxford / LMU) Archis Joglekar (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DESY)	Kathryn Baker (ISIS)	MLST Perspective		THRILL Contributed Session III
17	Tea Break	Panel discussion	Panel discussion	THRILL Discussion Panel		
18	Poster Session	Conference Dinner				
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20						
21	Inofficial meeting at Pubs around		Inofficial meeting at Pubs around	Inofficial meeting at Pubs around		



IOP Publishing
**MACHINE
LEARNING**
Science and Technology
Part of the machine learning series

2023
IMPACT FACTOR
6.3

2023
CiteScore
9.1

OPEN
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Call for papers – submission site opening soon

Focus on Intelligent Systems in Laser, Plasma and Accelerator Physics

The confluence of artificial intelligence with laser, plasma, and accelerator physics is transforming how we operate large-scale physics facilities and advance our understanding of fundamental physics. As these facilities become more sophisticated, traditional control and optimization approaches are reaching their limits.

We aim to showcase how AI is revolutionizing facility operations, experimental design, and computer simulations in these fields. This ranges from automated control systems that maintain laser beam stability to computer models that predict complex plasma behavior. The field is advancing quickly, with new methods emerging that combine physical understanding with data-driven approaches to make experiments more efficient and reliable.

We welcome contributions across the spectrum of machine learning applications in these facilities, including control and automation, experimental design and optimization, smart diagnostics and data analysis, AI-enhanced simulations, predictive maintenance, digital facility models, real-time feedback systems, and physics-informed AI approaches. Of particular interest are works that demonstrate practical applications or theoretical advances in using AI to enhance research and operations in these interconnected fields.

Guest Editors

Andreas Döpp *LMU Munich, Germany*

Jeyan Thiyagalingam *Science and Technology Facilities Council (STFC), UK*

Ryan Roussel *SLAC National Accelerator Laboratory, USA*

SUBMISSION DEADLINE:
30th June 2025



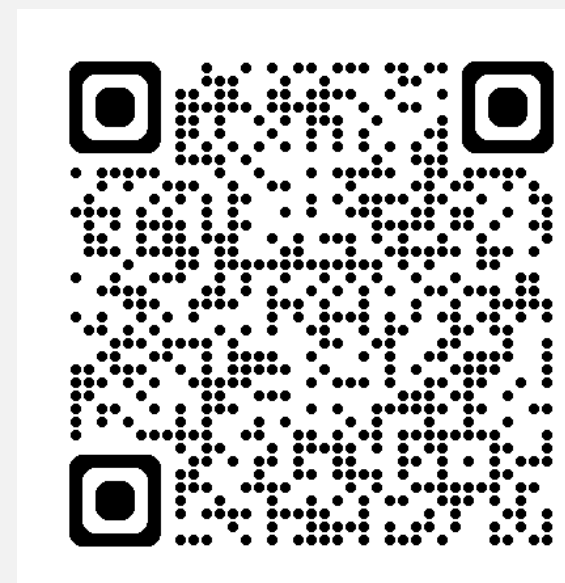
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Kyle Cranmer

University of
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Workshop schedule | Breaks

Lindermann
Simpkins Lee
Martin Wood
Audrey Wood

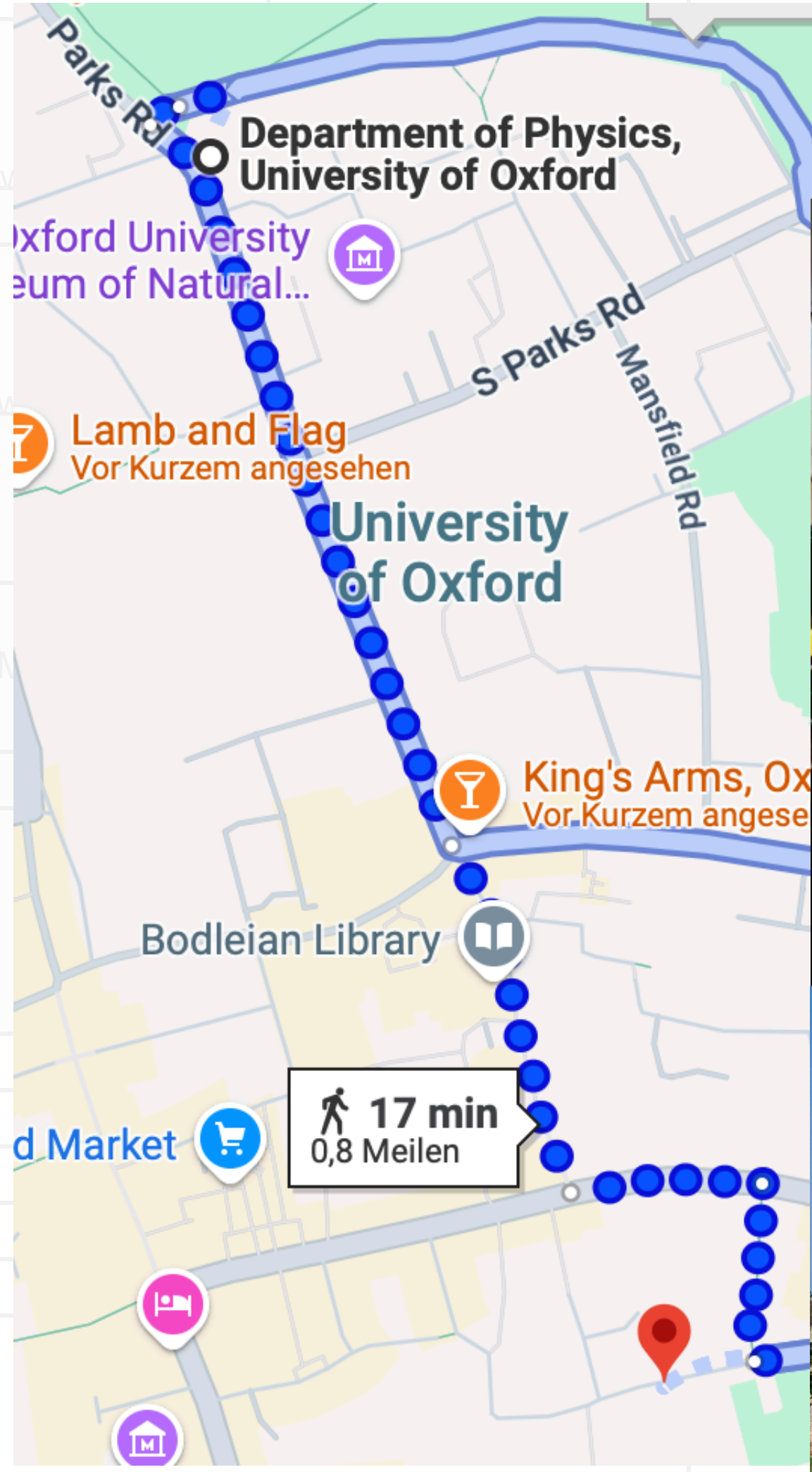
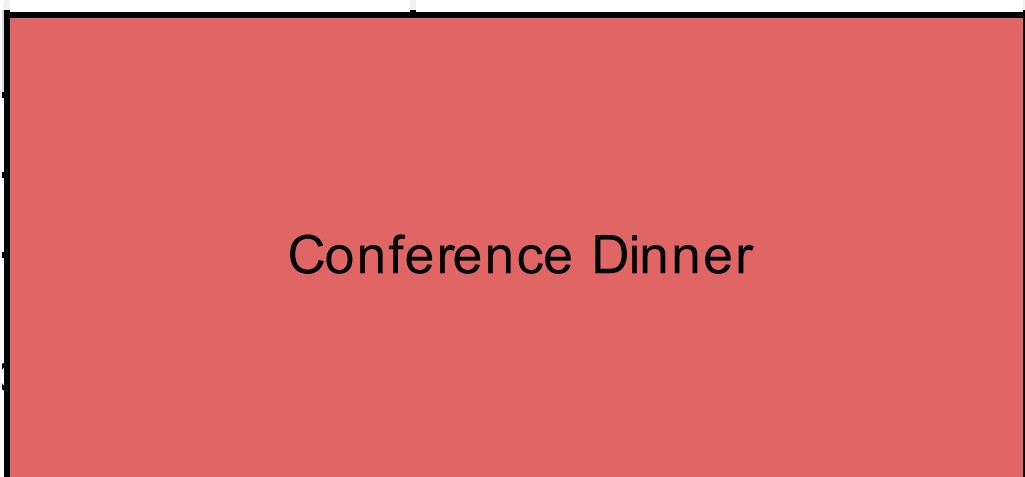
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13		Lunch Break	Lunch Break	Lunch Break	Lunch at CLF	
14						Bus back to Oxford (back by 14:30)
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16		Tea Break	Tea Break	Tea Break	Tea Break	Departures
17	Sunny Howard (Oxford / LMU) Archis Jogleka (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DESY)	Kathryn Baker (ISIS)	MLST Perspective	THRILL Contributed Session III	
18	Simpkins Lee Foyer	Panel discussion		THRILL Discussion Panel		
19	Poster Session					
20		Conference Dinner				
21	Inofficial meeting at Pubs around		Inofficial meeting at Pubs around	Inofficial meeting at Pubs around		

All next to Martin Wood Lecture Hall

Workshop schedule | Official dinner

	13.01 Monday	14.01 Tuesday	15.01 Wednesday	16.01 Thursday	17.01 Friday
9		Hands-On Deep Learning with PyTorch I			
10					
11	Arrivals	Hands-On Deep Learning with PyTorch II			
12					
13	Arrivals and Registration	Lunch Break			
14	Greetings & Introduction Alec Thomas	Ryan Roussel (SLAC) Chris Eberle (LMU)			
15	Vincent Bagnoud Tea Break				
16	Sunny Howard (Oxford / LMU) Archis Joglekar (U Michigan)	Chetanya Jain (LBNL) Andreas Maier (DFSY)			
17		Panel discussion			
18					
19	Poster Session				
20					
21	Informal meeting at Pubs around				

Conference Dinner at Merton College



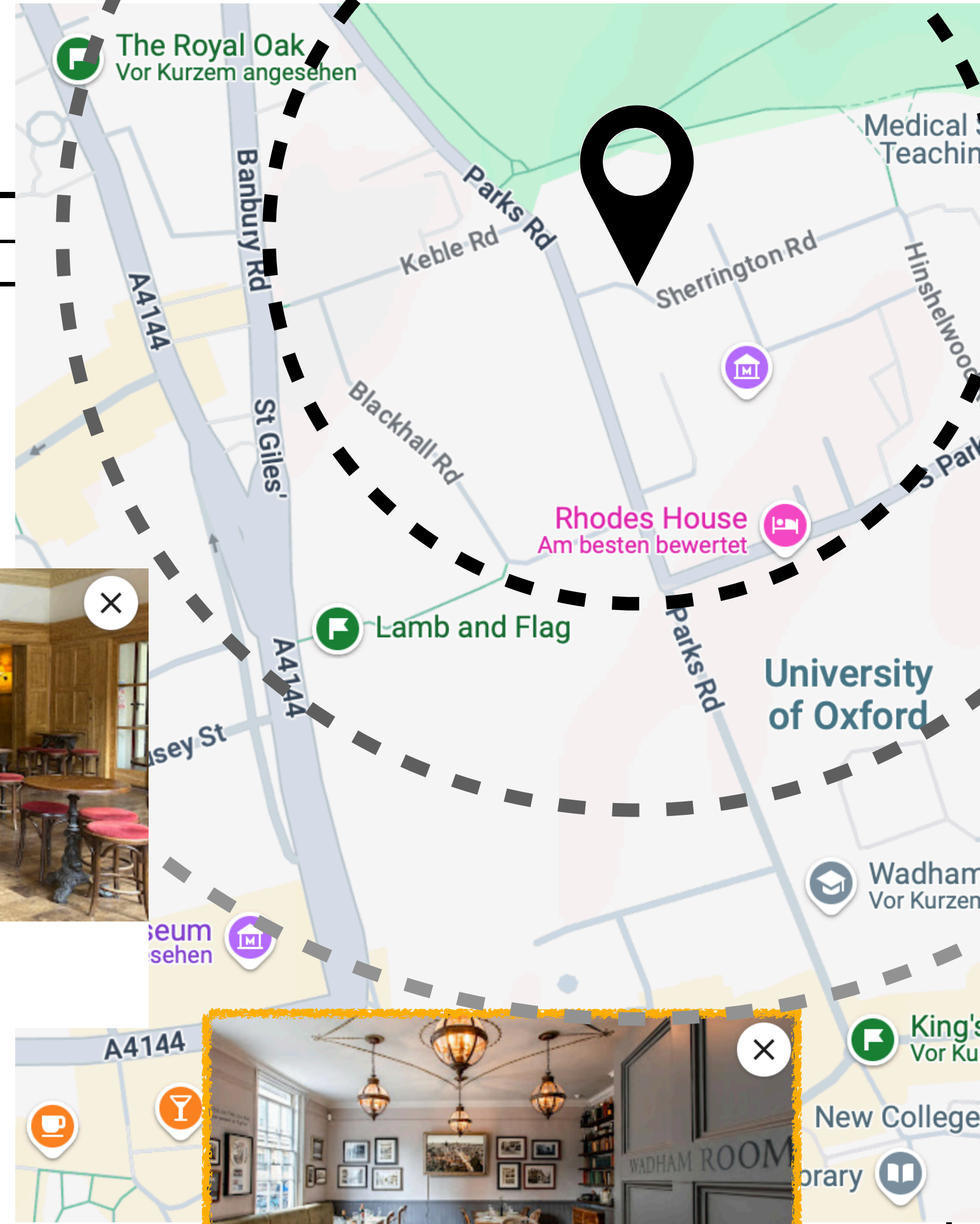
Bus to CLF (departure at 9:00)

Workshop schedule

	13.01 Monday	14.01 Tuesday
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21	Inofficial meeting at Pubs around	Inofficial meeting at Pubs around



The Royal Oak
4,3 ★★★★★ (1.148) ⓘ · 10–20 £



Lamb and Flag
4,4 ★★★★★ (1.057) ⓘ · 1–10 £



King's Arms
4,2 ★★★★★ (2.047) ⓘ · 10–30 £

Enjoy the workshop!

