

PHYSTAT's “Stats meets ML”

9th – 12th Sept 2024

Introductory Remarks

Louis Lyons



PHYSTAT

<https://phystat.github.io/Website/>

Events about statistical issues in Particle Physics analyses, and in Astro/Cosmo.

Started in 2000 with “Confidence Limits Workshop” at CERN

Workshops, Seminars, Informal Reviews

Website has slides and video of meetings

Recently including ML.

This meeting: Statistical issues connected with using ML techniques in HEP and Astro analyses

Mon	Tues	Wed	Thurs
	9.00 Welcome 9.15 ML in PP KASIECZKA 10.00 #5 Transformers for HEP, Spinner	9.00 ML BALDI (Remote) 9.45 Benchmarks Thiyagalingam 10.10 #73 Weak Lensing, Autenrieth	9.00 Mis-Modelling: HELD 9.45 #53 Bayesian evidence, Polanska
	10.30 Coffee	10.35 Coffee	10.15 Coffee
	11.00 ML in A/C WANDEL (Remote) 11.45 Gr Waves DAX	11.00 SBI GHOSH 11.45 Unfolding MIKUNI	Continuation of Interp 10.45 Kuusela 11.15 Peiris 11.45 Eller 12.10 Golling
	12.30 Lunch	12.30 Lunch/Poster session	12.35 Lunch
2.00 Astro/Cosmo for others TSAPRAZI 2.25 Part Phys for others WINTERBOTTOM 3.00 ML MAKINEN	2.00 Interpretability THALER 2.45 Anomaly session ZHANG	2.00 Unfolding Plehn 2.25 #79 Linear SBI, Handley 2.50 Decorrelation Chakravarti 3.15 Generative WINTERHALDER	2.00 Highlights LOUPPE 2.45 Highlights KUUSELA
3.45 Coffee	3.30 Coffee	4.00 Coffee	3.30 Coffee
4.15 Types of ML in Astro/Cosmo JEFFREY 4.55 Types of ML for Part Phys LANGFORD 5.35 End	Anomaly Session, cont 4.00 GROSSO 4.45 Aarrestad 5.10 #74 Anom-aware ML for DM, Scaffidi 5.35 #51 Feldman-Cousins, Villarreal 6.00-7.15 Poster Session/Drinks	4.30 #67 Fairness, Rieger 4.55 Systematics CRANMER (Remote) 5.40 #54 Syst-aware NN, Monsch 6.05 End 7.00 for 7.30 Dinner at Ognisko	4.00 Highlights LUCIE-SMITH 4.45 Highlights HEINRICH 5.30 Closing Discussion

Themes: **Optional Talks** **Range of ML** **Interpretability**
Anomaly session **Highlights** **Poster Session**

ABSTRACTS as CONTRIBUTED TALKS:

These 8 are shown with their Abstract number e.g. #5

Apart from lectures.....

2 Poster sessions: Welcome Drinks (today) and Wednesday lunch
2 prizes (democratic voting)

Lunches today and Thursday

Coffee breaks

Dinner at Ognisko, Wednesday 7pm

Wear badges for entry.

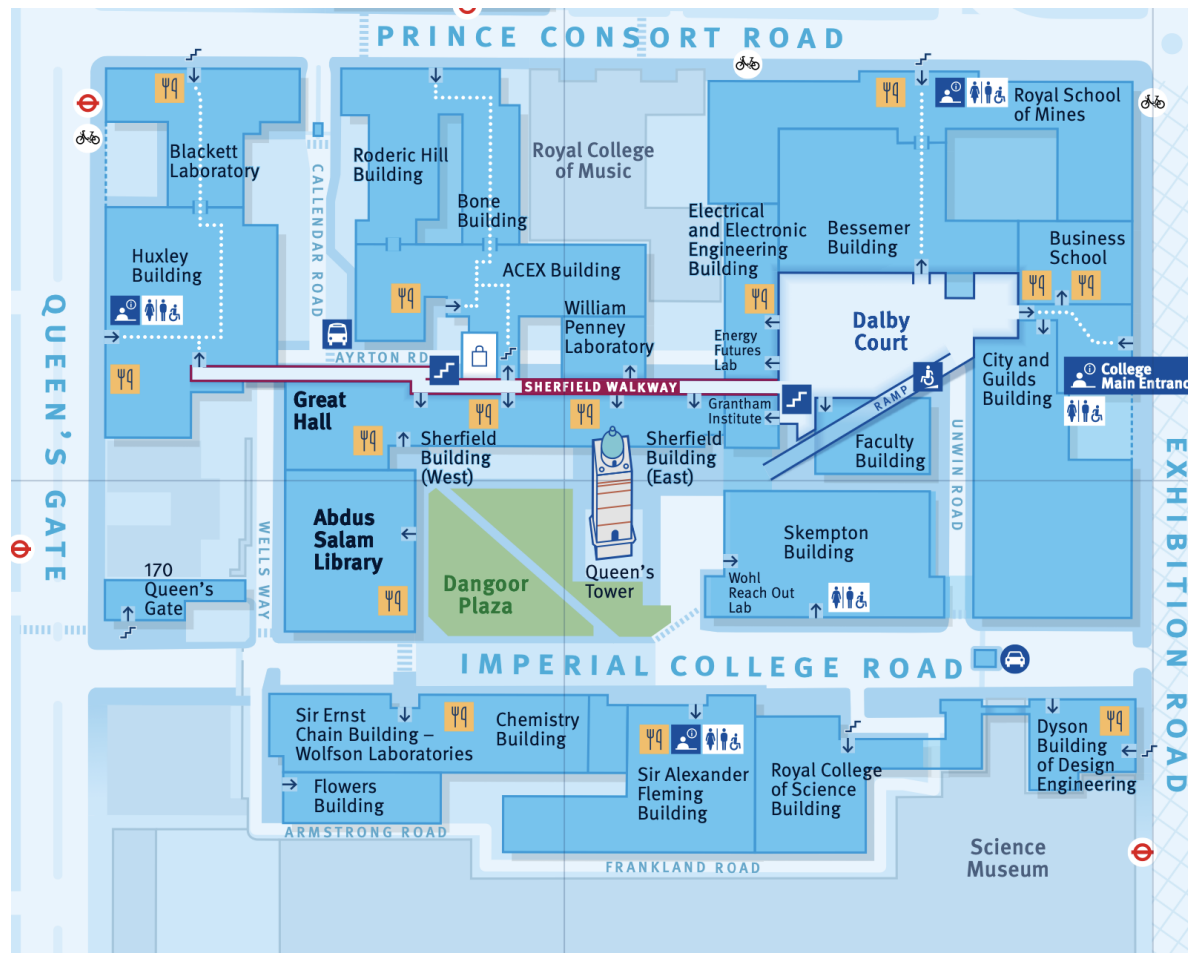
World Scientific Publishing stand (Arja and Leigh)

Possible Proceedings, Book,

Route to Lunch locations at Imperial

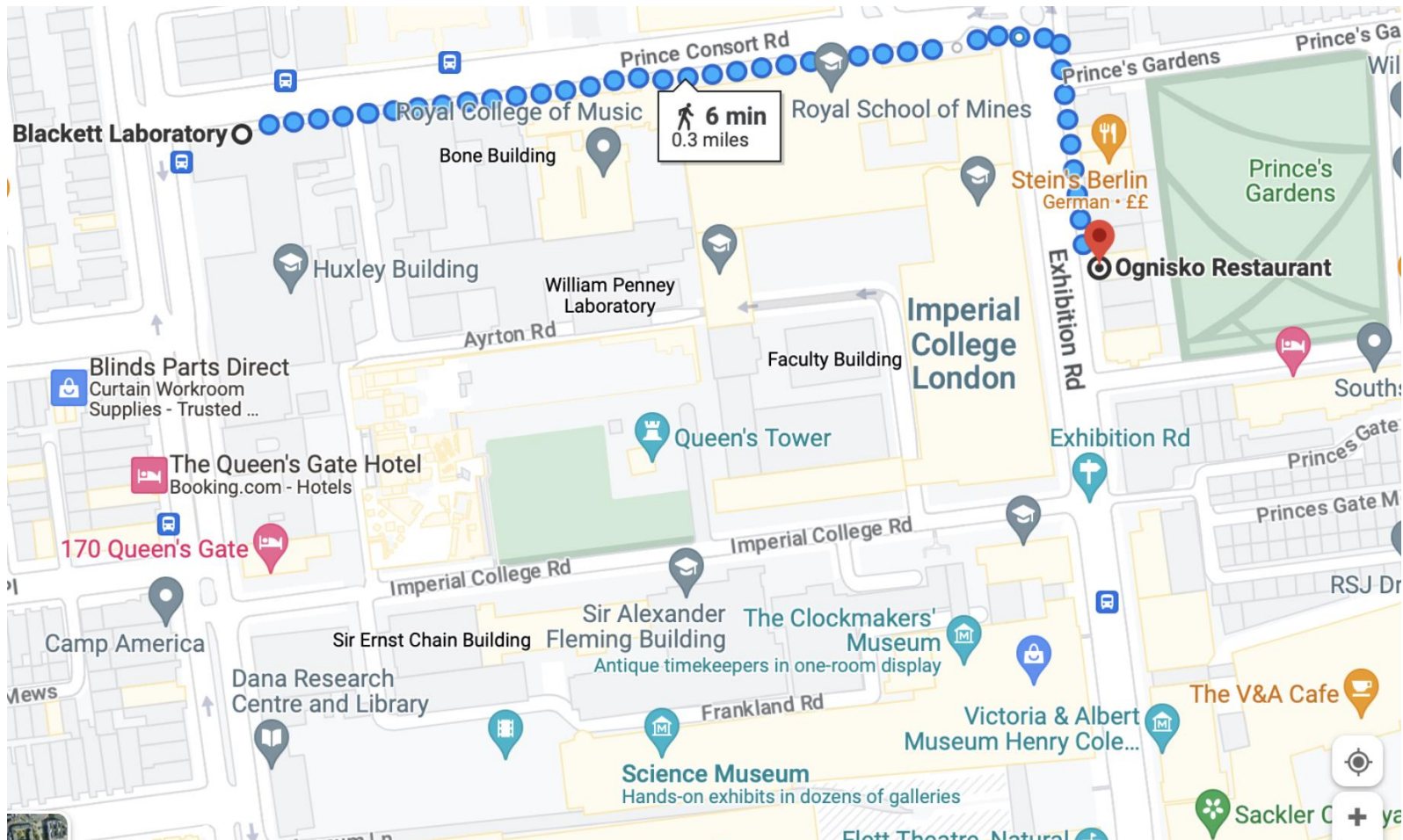
Beware: Map is only 2D (World in multi-D)

Find a local



Route to Dinner at Ognisko

55 Exhibition Rd



Practical Info

<https://indico.cern.ch/event/1407421/page/33592-social-programme-practical-information>

What to do in neighbourhood: Parks, Museums, Albert Hall,

Eating in Imperial (lunchtime) or nearby

London transport

Leaving cases: Room 521

Mattermost

Zoom: <https://cern.zoom.us/j/62711864233?pwd=ix1gZYHWUydmgoYF2DRftA0cKl71nA.1>

Connecting your computer: Use Wifi with eduroam, or ask us for a guest account

More Practical Info

Help:

LOC and AV helpers (identifiable by orange bands for badges)

Administrative office 542

Emergency 24 hour Imperial security number: 020 75891000

Emergency fire briefing - in the event of a fire alarm please follow the emergency exit signs to leave the lecture theatre. The Assembly Point is on Queen's Gate:

Up stairs to level 2, exit building, go left 30 metres, go left on Queen's Gate 20 metres.

Toilets: Next to lifts on each floor

THANK YOU

IMPERIAL for hosting meeting

LOC: Rob Bainbridge, (Chair), Matteo Agostini, Sunita Aubeeluck, Paula Consiglio, Jon Langford, Benedict Maier, Lucas Mäkinen, Marvin Pfaff, Nick Wardle, Danny Winterbottom

Marvin's Audio/Visual team

PROGRAMME COMMITTEE: (see Poster)

SPONSORS:

- Institute for Particle Physics Phenomenology, Durham (IPPP)
- Science and Technology Facilities Council's High Energy Physics branch (STFC HEP)
- Science and Technology Facilities Council's Computing branch
- Imperial College's Particle Physics Community
- Imperial College's Centre for Inference and Cosmology
- Institute of Physics' High Energy Particle Physics and Astroparticle groups
- World Scientific Publishing

- ALL OF YOU: For coming, and >400 remote registrants.

Enjoy the meeting