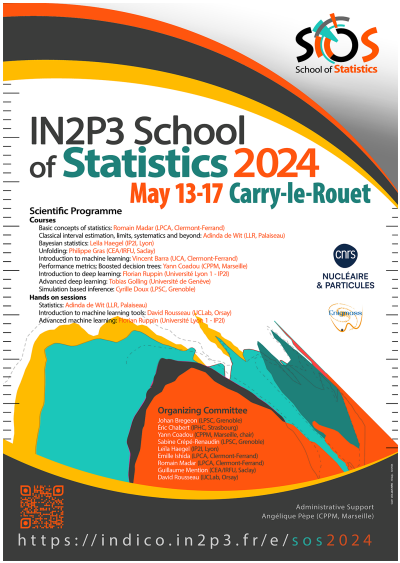
IN2P3 School of Statistics 2024

Yann Coadou

CPPM Marseille

Carry-le-Rouet, 13 May 2024



- 9th edition of successful biennial series
  - https://sos.in2p3.fr
- Strasbourg (2008), Autrans (2010–2016), La Londe-les-Maures (2018), Zoom (2021), Carry (2022)
- Organising committee (on site):
  - Johan Bregeon (LPSC Grenoble)
  - Éric Chabert (IPHC Strasbourg)
  - Yann Coadou (CPPM Marseille) [chair]
  - Sabine Crépé-Renaudin (LPSC Grenoble)
  - Leïla Haegel (IP2I Lyon)
  - Emille Ishida (LPCA, Clermont-Ferrand)
  - Romain Madar (LPC Clermont-Ferrand)
  - Guillaume Mention (CEA/IRFU Saclay)
  - David Rousseau (IJClab Orsay)
- Administrative support: Angélique Pèpe (CPPM, Marseille)
  - https://indico.in2p3.fr/e/SOS2024

Presentation of the school

- *"Give an overview of the concepts and tools used in particle physics, astro-particle physics and cosmology when probabilities and statistics come to play"*
- Machine learning part increased in past years
- Financial support:

- Technical and administrative support from CPPM

Allows to welcome 50 participants and 10 lecturers

This school is for you!

- Do not hesitate to ask questions, during and in-between lectures
- Nice and relaxing place
  $\Rightarrow$ **encourage interactions**

- Three main components
  - Fundamental concepts
  - Multivariate analysis (machine learning)
  - Hands-on sessions

	Mon 13	Tue 14	Wed 15	Thu 16	Fri 17
9:00-10:30	Arrival	*Adinda de Wit* Intervals & limits I	*Vincent Barra* Machine learning	*Leïla Haegel* Bayesian statistics	*Philippe Gras* Unfolding
10:30-11:00		Break			
11:00-12:30		*Adinda de Wit* Intervals & limits II	*Yann Coadou* Boosted decision trees; Metrics	*Florian Ruppin* Deep learning introduction	*Cyrille Doux* Simulation based inference
12:30-14:00	Lunch				
14:00-15:30	*Romain Madar* Basic concepts I	*Adinda de Wit* Hands-on: statistics	*David Rousseau* Hands-on: basics machine learning	*Florian Ruppin* Hands-on: Deep learning	Departure
15:30-16:00	Break		Free	Break	
16:00-17:30	*Romain Madar* Basic concepts II			*Tobias Golling* Advanced deep learning	

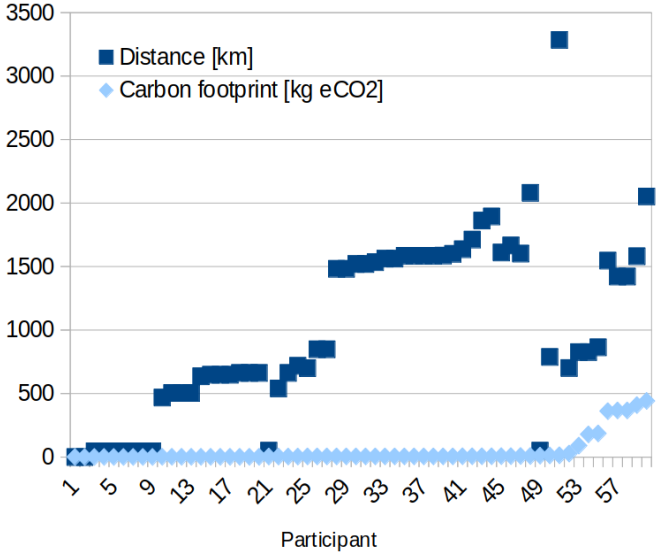
- Food (Miléade times)
  - breakfast: 7:30–9:00
  - lunch: 13:00–14:00
  - dinner: 20:00
  - bar: 18:00–23:00
- Wifi
  - use the resort network
  - apparently not working well in rooms...
  - ...so spend more time talking to each other at the bar!
- Hands-on sessions
  - You have of course already followed ▸ instructions before coming
  - If not, do it today! Ask for help if necessary
- Wednesday afternoon (free time after 15:30)
  - Enjoy the resort's facilities: outdoor swimming pool (got your swimsuit, right?), sauna/hammam (I think), etc.
  - Go for a hike/run along the coast or up the hills
  - Go to the beach(es), explore underwater marine life (esp. Cap Rousset marine reserve)
- Social dinner
  - Thursday evening
- Miscellaneous
  - Certificate of attendance: sent to all participants after the school
  - Evaluation form for feedback at the end of the week

Resort activities

LE MAUFATAN
LES BESQUENS
LES BOURGAILLES
Le Vallon de la Violette
Vallon de Jaume
Voie Rapide de la Côte Bleue
Vallon de l'Aigle
Vallon de Graffiane
L'ESCALAVOLLE
PLATEAU DE GRAFFIANE
LE ROUET
Grand Bleu
La Redonne Ensuès
LA REDONNE
Calanques des eaux salées
beach
Calanque des Eaux Salées
Madrague De Giromag
conference room
Île de La Grande Mona
Calanque du Puy
Calanque des Figuières
MÉJEAN
PETIT MÉJ
Calanque du Cap Rousset
Cap Rousset
marine reserve (2.5km)
Hide Options
Google Maps
Satellite
Terrain
Bike Lanes & Trails
Kilometer Markers
Course Points (0)
Popularity Heatmap
300 m

Carbon footprint of travelling to the school

- Total distance: 62600 km (1026 km on average)
- Total emissions: 3100 kCO_2e (50 kCO_2e) on average



Neurons making decisions. . .