



# INTEGRAT KICK-OFF 2023

## 21-23 November, Tøyen hovedgård

### Day 1: Tuesday 21 November

09.00 - 12.00    Integreat meetings

**12.00 - 12.40    Lunch & registration**

12.40 - 13.20    Welcome by Integreat codirectors  
Arnoldo Frigessi, Robert Jenssen, Lilja Øvrelid,  
Martin Giese, Ingrid K. Glad

13.20 - 14.00    Introduction to the programme  
Integreat Centre Director Arnoldo Frigessi

*Moderator: Martin Giese, UiO*

14.00 - 14.25    **Scalable identification of anomalous structure in non stationary data stream settings**

Ingrid K. Glad, Martin Tveten,  
Idris Eckley, Michael Kampffmeyer

14.25 - 14.50    **Learning differential models (and other logic rules) from data with uncertainty**

Alvaro Kohn-Lugue, Benjamin Ricaud,  
Håkon Tasken, Arnoldo Frigessi

14.50 - 15.05    **The ethics of large language models**

Anna Smajdor, Andrei Kutuzov, Lilja Øvrelid,  
Erik Velldal, Manuela Zucknicks

**15.05 - 15.25    Break**

*Moderator: Lilja Øvrelid, UiOs*

15.25 - 16.05    **Disrepancy measures: knowledge-extracting information bottlenecks by novel non-parametric, differentiable discrepancy measures**

Robert Jenssen et al.

16.05 - 16.50    **Control of neural net representations**

Benjamin Ricaud, Ali Ramezani,  
Arnoldo Frigessi, Kristoffer Wickstrøm,  
Michael Kampffmeyers

16.50 - 17.05    **Efficient use of heterogeneous data by the power of Logic, ML, and Statistics**

Fred Godtliebsen, Valeria Vitelli, Ida Scheel,  
Ingrid Hobæk Haff, Tero Aittokallio, Basil Ell

17.05 - 17.45    **Meeting Integreat's Scientific Advisory Board - Online**

Professor Sofia Olhede, EPFL Lausanne;  
Professor Ian Horrocks, University of Oxford;  
Professor Chris Nemeth, Lancaster University

17.45 - 19.30    Free time

19.30 - 23.00    Dinner, Tårnet Kulturarena,  
Kabelgata 51, OSLO

## Day 2: Wednesday 22 November

08.00 - 09.00 Coffee & light breakfast

*Moderator: Robert Jenssen, UiT*

09.00 - 09.15 **Hybrid modelling**  
Arnoldo Frigessi, Alvaro Kohn-Luque

09.15 - 09.40 **Bayesian Machine learning with constraints**  
Ida Scheel, Geir Storvik

09.40 - 10.05 **Uncertainty quantifications in the presence of logical constraints**  
Arnoldo Frigessi, Egor Kostylevz

10.05 - 10.20 **Synthetic data with vines**  
Ingrid Hobæk Haff, Elisabeth Griesbauer, Arnoldo Frigessi

10.20 - 10.45 Break

10.45 - 10.50 Group photo

*Moderator: Ingrid K. Glad, UiO*

10.50 - 11.30 **Logic and Bayesian statistical models: handling inconsistencies**  
Ida Scheel, Valeria Vitelli, Martin Giese, Arnoldo Frigessi, Egor Kostylev, Arild Waaler, Anne-Marie George

11.30 - 11.55 **Multi-modal data integration for personalised treatment recommendations**  
Riccardo De Bin, Valeria Vitelli, Basil Ell, Tero Aittokallio

11.55 - 12.10 **Multi-step question answering over structured knowledge bases**  
Martin Giese & Basil Ell

**12.10 - 13.20    Lunch & group project (social activity)**

*Moderator: Robert Jenssen, UiT*

**13.20 - 13.35    Complete minimal information extraction from hierarchical data for prediction (logic regression)**

Martin Giese, Arnaldo Frigessi, Egor Kostylev,  
Leif Harald Karlsen, Geir Storvik,  
Nils Hjort, Ingrid K. Glad

**13.35 - 14.05    Knowledge & bias extraction from LMs**

Ana Ozaki, Lilja Øvrelid

**14.05 - 14.30    Chemical knowledge: structure models for transition metal complexes**

Riccardo De Bin, Basil Ell,  
Johan Pensar

**14.30 - 15.00    Break**

*Moderator: Lilja Øvrelid, UiO*

**15.00 - 15.40    Towards robust machine learning through casual multi-task learning**

Johan Pensar

**15.40 - 16.05    Discrepancy measures & accelerated likelihood-free inference for simulator-based models**

Henri Pesonen, Jukka Corander,  
Robert Jenssen, Michael Kampffmeyer

**16.05 - 16.20    AI regulations, ethics & rewards**

Arnaldo Frigessi, Anna Smajdor,  
Manuela Zucknick

**16.20 - 16.45    Summing up**

**16.45 - 19.00    Free time**

Guided tour at the Botanical garden

**19.00 - 21.00    Group dinner**

Trattoria Popolare, Trondheimsveien 2

**21.00 - 23.00    Socialising** Schous bryggeri, Trondheimsveien 2

## Day 3: Thursday 23 November

|               |                                                                                                                                                          |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08.00 - 09.00 | Coffee & light breakfast<br><br><i>Moderator: Martin Giese, UiO</i>                                                                                      |
| 09.00 - 09.40 | <b>Embedded sufficient statistics</b><br>Ali Ramezani-Kebrya, Robert Jenssen,<br>Zhiyuan Wu, Arnoldo Frigessi                                            |
| 09.40 - 10.05 | <b>Sparse neural networks: benefits and challenges</b><br>Fred Godliebsen, Valeria Vitelli, Ida Scheel,<br>Ingrid Hobæk Haff, Geir Storvik, Anne Solberg |
| 10.05 - 10.20 | <b>Preferences in LLM: Fine-tuning language models with human preferences</b><br>Arnoldo Frigessi, Ida Scheel,<br>Valeria Vitelli                        |
| 10.20 - 10.40 | <b>Break</b>                                                                                                                                             |
| 10.40 - 11.20 | <b>Separation of linguistic and factual knowledge</b><br>Andrei Kutuzov & Egor Kostylev                                                                  |
| 11.20 - 11.45 | <b>Tractable computational approaches for structured tensor models</b><br>Valeria Vitelli, William Denault,<br>Tero Aittokallio                          |
| 11.45 - 12.15 | Next steps at Integreat                                                                                                                                  |
| 12.15 - 13.00 | Lunch and farewell                                                                                                                                       |