

Mathematics of data

Structured representations for sensing, approximation and learning

29 – 31 May 2019

Agenda

The British Library
96 Euston Road
NW1 2DB, UK

The Alan Turing Institute is located on the first floor of the British Library and can be accessed via the main doors from 9:30 onwards. Please allow 10 minutes for queuing when planning your journey.

Wednesday 29 May

- | | |
|---------------|--|
| 9:45 – 10:15 | Registration |
| 10:15 – 11:00 | Approximation with deep networks - Remi Gribonval (Inria, France) |
| 11:00 – 11:45 | Nonlinear approximation by deep ReLU networks - Ron DeVore (Texas A&M, USA) |
| 11:45 – 12:15 | Coffee break |
| 12:15 – 13:00 | Two decentralized learning problems: Sketching and policy evaluation - Justin Romberg (Georgia Institute of Technology, USA) |
| 13:00 – 14:30 | Lunch and poster session |
| 14:30 – 15:15 | Clustering and classification - From the core to the edge - Thomas Strohmer (University of California, Davis, USA) |
| 15:15 – 16:00 | The mother of all representer theorems for inverse problems and machine learning - Michael Unser (EPFL, Switzerland) |
| 16:00 – 16:30 | Coffee break |
| 16:30 – 17:15 | From shallow to deep learning for inverse imaging problems: some recent approaches - Carola-Bibiane Schönlieb (University of Cambridge, UK) |
| 17:15 | Close |

Thursday 30 May

- 9:45 – 10:15 Registration
- 10:15 – 11:00 **SketchySVD** - Joel Tropp (California Institute of Technology, USA)
- 11:00 – 11:45 **Optimal transport for machine learning** - Gabriel Peyre (Ecole Normale Supérieure, France)
- 11:45 – 12:15 Coffee break
- 12:15 – 13:00 **On the (unreasonable) effectiveness of compressive imaging** – Ben Adcock (Simon Fraser University of Canada)
- 13:00 – 14:30 Lunch and poster session
- 14:30 – 15:15 **Deep dictionary learning approaches for image super-resolution** - Pier Luigi Dragotti (Imperial College, UK)
- 15:15 – 16:00 **Mad Max: Affine spline insights into deep learning** - Richard Baraniuk (Rice University USA)
- 16:00 – 16:30 Coffee break
- 16:30 – 18:00 Whiteboard session
- 19:30 – 23:00 Workshop dinner

Friday 31 May

- 9:45 – 10:15 Registration
- 10:15 – 11:00 **Modelling networks and network populations via graph distances** - Sofia Olhede (EPFL, France)
- 11:00 – 11:45 Michael Bronstein (Imperial College, UK)
- 11:45 – 12:15 Coffee break
- 12:15 – 13:00 **Building and validating causal inference models - theory and algorithms** - Mihaela van der Schaar (University of Cambridge, UK)