Workshop on state of the art in sampling and clustering

Report of Contributions

https://indico.mpp.mpg.de/e/7494

Contribution ID: **1** Type: **not specified**

Registration

Contribution ID: **2** Type: **not specified**

Welcome

Monday, 5 October 2020 13:00 (10 minutes)

Presenters: CALDWELL, Allen (Max Planck Institute for Physics); SCHULZ, Oliver (Max Planck for Physics)

Contribution ID: **3** Type: **not specified**

Introduction to Information Field Theory (IFT)

Monday, 5 October 2020 13:10 (1h 50m)

Presenter: ENSSLIN, Torsten (Max Planck Institute for Astrophysics)

Contribution ID: **4** Type: **not specified**

NIFTy –Numerical Information Field Theory

Monday, 5 October 2020 15:30 (1h 30m)

NIFTy "Numerical Information Field Theory", is a versatile library designed to enable the development of signal inference algorithms that are independent of the underlying grids (spatial, spectral, temporal, ⋯) and their resolutions. Its object-oriented framework is written in Python, although it accesses libraries written in C++ and C for efficiency.

Presenter: ARRAS, Philipp

Contribution ID: **5** Type: **not specified**

Updates on BAT.jl, a Bayesian Analysis Toolkit in Julia

Friday, 9 October 2020 10:00 (1 hour)

BAT.jl is a Bayesian Analysis Toolkit implemented in the Julia language. It is a high high-performance tool box for Bayesian inference with statistical models expressed in a general-purpose programming language, instead of a domain-specific language.

Typical applications for this package are the extraction of the values of the parameters of a model, the comparison of different models in the light of a given data set and the test of the validity of a model to represent the data set at hand. BAT.jl provides access to the full Bayesian posterior distribution to enable parameter estimation, limit setting and uncertainty propagation. BAT.jl also provides supporting functionality like plotting recipes and reporting functions.

Presenter: SCHULZ, Oliver (Max Planck for Physics)

Contribution ID: **6** Type: **not specified**

Approximate Bayesian Computation (ABC)

Tuesday, 6 October 2020 09:00 (1h 30m)

Presenter: ROBERT, Christian (Université Paris Dauphine PSL)

Contribution ID: **7** Type: **not specified**

Approximate Bayesian Computation (ABC)

Tuesday, 6 October 2020 10:30 (1h 30m)

Presenter: ROBERT, Christian (Université Paris Dauphine PSL)

Contribution ID: **8** Type: **not specified**

Interactive Discussions

Contribution ID: **9** Type: **not specified**

Exercise session

Contribution ID: **10** Type: **not specified**

Statistics in autonomous driving

Tuesday, 6 October 2020 13:30 (45 minutes)

Presenter: BEAUJEAN, Frederik (MPP)

Contribution ID: **11** Type: **not specified**

Free time to work on content of previous lectures

Contribution ID: **12** Type: **not specified**

Foundations of Clustering

Wednesday, 7 October 2020 10:00 (1h 30m)

Presenter: GHOSHDASTIDAR, Debarghya (TUM)

Contribution ID: **13** Type: **not specified**

Clustering, hands-on

Thursday, 8 October 2020 10:00 (2 hours)

Presenter: ELLER, Philipp (Max Planck for Physics)

Contribution ID: **14** Type: **not specified**

Introduction to Hamiltonian Monte Carlo (HMC)

Thursday, 8 October 2020 13:30 (1h 30m)

Presenter: BETANCOURT, Michael

Contribution ID: **15** Type: **not specified**

More on Hamiltonian Monte Carlo, with exercises

Thursday, 8 October 2020 15:30 (1h 30m)

Presenter: BETANCOURT, Michael

Contribution ID: **16** Type: **not specified**

Q&A with lecturers, discussion on cutting-edge problem

Contribution ID: **17** Type: **not specified**

Social Discussion Session

Friday, 9 October 2020 11:00 (1 hour)

Contribution ID: **18** Type: **not specified**

Introduction to nested sampling

Wednesday, 7 October 2020 15:30 (1h 30m)

Presenter: BUCHNER, Johannes (MPI for Extraterrestrial Physics)

Contribution ID: **19** Type: **not specified**

Clustering, continued

Wednesday, 7 October 2020 13:30 (1h 30m)

Presenter: GHOSHDASTIDAR, Debarghya (TUM)

Contribution ID: **20** Type: **not specified**

Epidemic Models to Quantify the Effects of Testing, Contact Tracing and Containment

Tuesday, 6 October 2020 15:00 (1 hour)

Presenter: GOMEZ RODRIGUEZ, Manuel (MPI for Software Systems)