

Advanced Machine Learning

Discussion sessions

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To know, read; to learn, write; to master, teach.

(Hindu proverb)

Instructions

Goal: read, understand and explain research papers on advanced machine learning concepts or methods.

- 10 subjects, with 1 to 3 assigned research papers.
- Your task is to prepare a 1-hour lecture on those works.
 - 50 minutes for the talk.
 - 10 minutes for questions.
- Everyone in the group must talk.
- The lecture is targeted to your peers.
 - Master the materials.
 - Assume your audience know as much you know now, but not more.
- You are welcome (and encouraged) to make use of other resources (previous papers, books, etc).
- Schedule an intermediate meeting with the assigned professor.

Discussion sessions

- Session 1 (19/04/2018):
 - (1) Gaussian processes for classification (LW)
 - (2) Bayesian optimisation (LW)
- Session 2 (26/04/2018):
 - (3) Deep NN architectures (GL)
 - (4) NN parameter optimisation algorithms (GL)
 - (5) Auto-regressive NN models (GL)
- Session 3 (03/05/2018):
 - (6) Domain adaptation (PG)
 - (7) Probabilistic programming (PG)
- Session 4 (17/05/2018):
 - (8) PAC-Learning (LW)
 - (9) Boosting theory (PG)
 - (10) Deep learning theory (GL)

For each topic, the associated research papers can be found on the [course web page](#).

Groups

- (A) Laura Capodicasa, Simon Lorent, Sarah Paquot, Maxime Tasset, Laurent Vanhee
- (B) Amina Benzerga, Loïc Lejoly, Adrien Pitz, Joris Sébastien, Benoit Umé
- (C) Dubois Antoine, Quentin Diprima, Francart Francois, Florian Merchie, Di Bartolomeo Michael
- (D) Christophe Andre, Davy Chiem Dao, Maxime Noirhomme, Loïc Sacré
- (E) Sébastien Blondiau, Nathan Greffe, Arnaud Vallot, Francois Delarbre
- (F) Judicael Poumay, Mehdi Sauvage, Dupont Xavier, Vandenberghe Julien
- (G) Sergio Castillo, Samy Doloris, Ahmed Ktob, Maxime Horman
- (H) Géraldine Brieven, Natan Derroitte, Rayane Labib, Mehdi Testouri
- (I) Mathias Beguin, Corentin Jemine, Pascal Leroy, Pierre Nicolay, Frederic Vecoven
- (J) Issam Amraoui, Donovan Derkenne, Olivier Schyns, Damien Sprumont, Camille Leroux

Group assignments

```
import numpy as np
np.random.seed(XXX)

groups = ["A", "B", "C", "D", "E", "F", "G", "H", "I", "J"]
for g, t in zip(groups, np.random.permutation(10)+1):
    print(g, t)
```