POLITECNICO
DI TORINO

Machine Learning And Deep Learning

A.A. 2019/2020

Barbara Caputo

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Lecture 28:
Projects and
Final Exam Modality

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Exam Modality

Homeworks + Project + Project Discussion

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During the lectures - 3 (programming) exercises on key topics

Individual work (no groups).

1- Nearest Neighbors / SVM
2- Deep Learning: Classification
3- Deep Learning: Domain Adaptation

Each homework will be graded in {0,2}
Maximum total score : 6
Minimum total score : 4 -- **If the score is < 4 ⟶ no access to the other parts of the exam**
score 5 = + 1, score 6 = +2

You can keep your homework till the last exam session before the next course beginning (1 year)

Deadline for homework reports: 2 weeks before exam date, submission through 'portale della didattica'

Exam Modality

Homeworks + Project + Project Discussion

On April 28 it will be uploaded a lecture on possible projects.
You can work in teams of **up to 3 people**.

Project Proposal Submission Deadlines: May 10, 2020 if you plan to make the exam in June/July ; August 1, 2020 for the other two sessions.

Your project proposal will consist of:

- the names of the people in your team
- the research topic you have chosen
- it is possible to submit a project proposal on a topic different from what presented, but
    - it should be of the same level of difficulty of the other options
    - it should be discussed in advance with B.C.
    - it should be **strongly motivated and well detailed**

Exam Modality

Homeworks + Project + Project Discussion

- it is possible to submit a project proposal on a topic different from what presented, but
  - it should be of the same level of difficulty of the other options
  - it should be discussed in advance with B.C.
  - it should be **strongly motivated and well detailed**

In the case your team decides to opt for a different project than those suggested, you should submit a 1 page project proposal that should describe:

- What is the problem that you will be investigating? Why is it interesting? (1 pt)
- What reading will you examine to provide context and background? What data will you use? (1 pt)
- What method or algorithm are you proposing? How do you plan to improve or modify existing implementations? (2 pt)
- How will you evaluate your results? Qualitatively (e.g. plots or figures) and Quantitatively (e.g. what performance metrics or statistical tests) (6 pt)

Final report due: ten days before the exam
The report will be a pdf of max 10 pages using a provided template

You can keep your project till the last exam session before the next course beginning (1 year)

Exam Modality

Homeworks + Project + Project Discussion

- Presentation of max 12 mins +Q/A
- Presentation: same for all, mins divided equally among all members of the group
- Q/A Individual, on ***anything*** about the project

Score: max 10 for quality of project; max 10 for quality of report & presentation; max 10 for Q&A

Overall grade: scores from the project (execution, presentation and discussion), plus up to 2 points of bonus from the homeworks

N.B.: Once you sit the exam, you cannot refuse the grade!

Possible Projects

Project descriptions are available here:

RGB-D Domain Adaptation with Cross-Modality Self-Supervision
https://docs.google.com/document/d/11_0cQBoJ-0YTr0x1Ja8C6O9CTaQJXM3Y2lmUO-G9l8M/edit?usp=sharing

Incremental Learning in Image Classification
https://docs.google.com/document/d/1OlkrQsk5tjD9-1SBDxSBZPmd3VctkycQG8oKeSpJcnA/edit?usp=sharing

First Person Action Recognition
https://docs.google.com/document/d/1XfYPDiedfg8MHmKD3rkWY3ssk2opO_VXDagnXqlTrLo/edit?usp=sharing

A presentation for each project will be uploaded soon

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