ML Project

ML project

1. Find a problem that interests you, formulate it as a ML problem, find relevant dataset(s)

   - The type of problems that can be solved by making **predictions**

   - E.g., how much can I sell my old mobile phone for? (Prediction: €107)

2. Apply ML methods to make predictions

   - Apply what you are going to learn in the lectures and the assignments

3. Compare different ML methods and choose the best one

4. Submit a report and do peer review

Objectives

✔️ Model real-life problems as ML problems

✔️ Apply basic ML methods to solve the problems

✔️ Write scientific report

✔️ Peer review

~~Train a model with excellent performance~~

~~Find a competitive solution for a complex problem~~

Objectives

ML problem
- Data points: days
- features: temperature at 01:00, 03:00, 05:00
- labels: temperature at 23:00

ML method
- Linear regression

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: days
- features: temperature at 01:00, 03:00, 05:00
- labels: temperature at 23:00

👎🏻

ML method
- Linear regression

Excellent report

Excellent peer review

✘ Model real-life problems as ML problems

✔ Apply basic ML methods to solve the problems

✔ Write scientific report

✔ Peer review

Objectives

ML problem

- Data points: days
- features: temperature at 01:00, 03:00, 05:00
- labels: temperature at **21:00**

ML method

- Linear regression

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: days
- features: temperature at 01:00, 03:00, 05:00
- labels: temperature at **21:00**

👎🏻

ML method
- Linear regression

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Objectives

ML problem
- Data points: days
- features: temperature at 01:00, 03:00, 05:00
- labels: **minimum daytime temperature**

ML method
- Linear regression

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: days
- features: temperature at 01:00, 03:00, 05:00
- labels: **minimum daytime temperature**

👌 **Different, but only a very straight forward variation.**

ML method
- Linear regression

Excellent report

Excellent peer review

✔ Model real-life problems as ML problems

✔ Apply basic ML methods to solve the problems

✔ Write scientific report

✔ Peer review

Objectives

ML problem
- Data points: days
- features: **something completely different**
- labels: temperature at 21:00

ML method
- Linear regression

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: days
- features: **something completely different**
- labels: temperature at 21:00

👍 **Very original**

ML method
- Linear regression

Excellent report

Excellent peer review

✔ Model real-life problems as ML problems

✔ Apply basic ML methods to solve the problems

✔ Write scientific report

✔ Peer review

Objectives

ML problem
- Data points: iris
- features: sepal width
- labels: sepal length

ML method
- Linear regression

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: iris
- features: sepal width
- labels: sepal length

ML method
- Linear regression

Excellent report

Excellent peer review

👎🏻

✘ Model real-life problems as ML problems

✘ Apply basic ML methods to solve the problems

✔️ Write scientific report

✔️ Peer review

Objectives

ML problem
- Data points: iris
- features: **sepal length**
- labels: **sepal width**

ML method
- Linear regression

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: iris
- features: **sepal length**
- labels: **sepal width**

ML method
- Linear regression

Excellent report

Excellent peer review

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✘ Model real-life problems as ML problems

✘ Apply basic ML methods to solve the problems

✔️ Write scientific report

✔️ Peer review

Objectives

ML problem
- Data points: iris
- features: sepal width
- labels: sepal length

ML method
- **Polynomial regression**

Excellent report

Excellent peer review

Objectives

ML problem
- Data points: iris
- features: sepal width
- labels: sepal length

👎🏻

ML method
- **Polynomial regression**

Excellent report

Excellent peer review

✘ Model real-life problems as ML problems

✔️ **Apply basic ML methods to solve the problems**

✔️ Write scientific report

✔️ Peer review

Objectives

ML problem
- Data points: iris
- features: **something completely different**
- labels: sepal length

👍 **Very original**

ML method
- Linear regression

Excellent report

Excellent peer review

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✔️ Apply basic ML methods to solve the problems

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Reviewing process

- Do all peer reviews assigned to you

- Remember to motivate your grading in the comment box

- **~100 submissions** will be randomly selected and **reviewed by TAs**

- TA review **after** peer review

Summary

- Come up with your own ML problem

- Don't worry about losing points for your originality unless you directly transfer the idea from somewhere

- Simple problems are great candidates

- Focus on the process, not the results (answer the whys > model performance)