Machine Learning – WPOs

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Monday (8h – 10h)

Tuesday (10h – 12h)

Evaluation

- 75 % Written open-book exam
- 25 % Programming project

- **Study material for exam** includes pen-and-paper exercises solved in the class for each chapter
- For every WPO, solutions will follow on Canvas
- I try to give challenge exercises for each session
  - Solutions to these will not follow on Canvas
  - If you want me to look over your solutions or to discuss these exercises you are free to send me an email or talk to me
  - These exercises are good practice for the exam…

Project

- 25 % of the final grade

- Structured as a Kaggle competition
- Receive a dataset
- Apply the full ML pipeline, including data pre-processing and training, comparing and evaluating multiple learning algorithms
- Draw pertinent conclusions on the pre-processing steps and algorithm performance
- **Supporting materials for the project:** Python notebooks solved during the WPOs
- Project description will be announced in October/November

Programming setup

- Python 3+
- Jupyter Notebooks

- Recommended setup:

1. Install Anaconda package manager (comes with project Jupyter)
2. Create a virtual environment for the course
3. Load the virtual environment
4. Start Jupyter Notebook
5. Open and solve given Python notebooks

Setup guide

Installing Python

1) Recommended: Install Anaconda
   - https://www.anaconda.com/products/individual
2) Alternative: Install miniconda if you have limited disk space
   - https://docs.conda.io/en/latest/miniconda.html
3) Not recommended: Install Python from the official repository
   - https://www.python.org/

Setup guide

Setting up the virtual environment

1. Run `conda create --name ml-2223`
   - *This creates a new virtual environment with the name ml-2223.*
   - *Virtual environments are useful to manage development environments.*
   - *For example, if one course relies on a version of SomePackage which is incompatible with this course's version of SomeOtherPackage, separating them in different virtual environments will ensure that no problems occur*
2. Run `conda activate ml-2223`
   - *This activates your new virtual environment.*
   - *You should now see `(ml-2223)` as a prefix in your terminal*
3. Run `conda install numpy scipy pandas scikit-learn matplotlib jupyter`
   - *This installs the necessary packages for this course.*
   - *Note that you will have to type `y` at a certain point in the installation to also install additional dependencies*

Setup guide

Starting the notebooks

1. Run `jupyter notebook`
   - Jupyter notebook will start in that folder
2. To close Jupyter: hit `ctrl + c`