

APRO Aalto University
Profess on a Development

AI PROGRAMMING

The two-day training is divided into thematic sessions, where problems are presented to the students and when students create the solutions to the problems during the session.

Each student should have a computer and preparedness to run Python programs in Jupyter notebooks.

Each session contains a brief introductory lecture to the topic, and description of the programming exercise. Then, student proceed by programming, either alone or in pairs. Towards the end of the session, solutions will be reviewed.



SESSION 8: MACHINE LEARNING WORKFLOW

- This session will be covered on the second day during 14.15-16.15.
- The learning objective is get familiar with a conventional organization of a machine learning workflow, for instance in prediction problems



LECTURE CONTENTS

- Organization of a predictive analytics solutions
- Data
- Libraries, models, library implementations
- Assessment of results
- Presentation of results



MACHINE LEARNING WORKFLOW

Import needed libraries Import ...

Read data Excel, csv, JSON

Pre-processing

Create a model

Train a model with data, cross-validation

Present results

K-fold cross validation

A loop

Data to training and validation sets

Train the model with training set

Store errors for each model and data



EXERCISES

- The exercises are listed in the Jupyter notebook Session-8-machine-learning-workflow.ipynb
- Work one exercise at the time
- Not all exercises need to be completed



REVIEW OF THE SOLUTIONS

• How do the solutions look like?