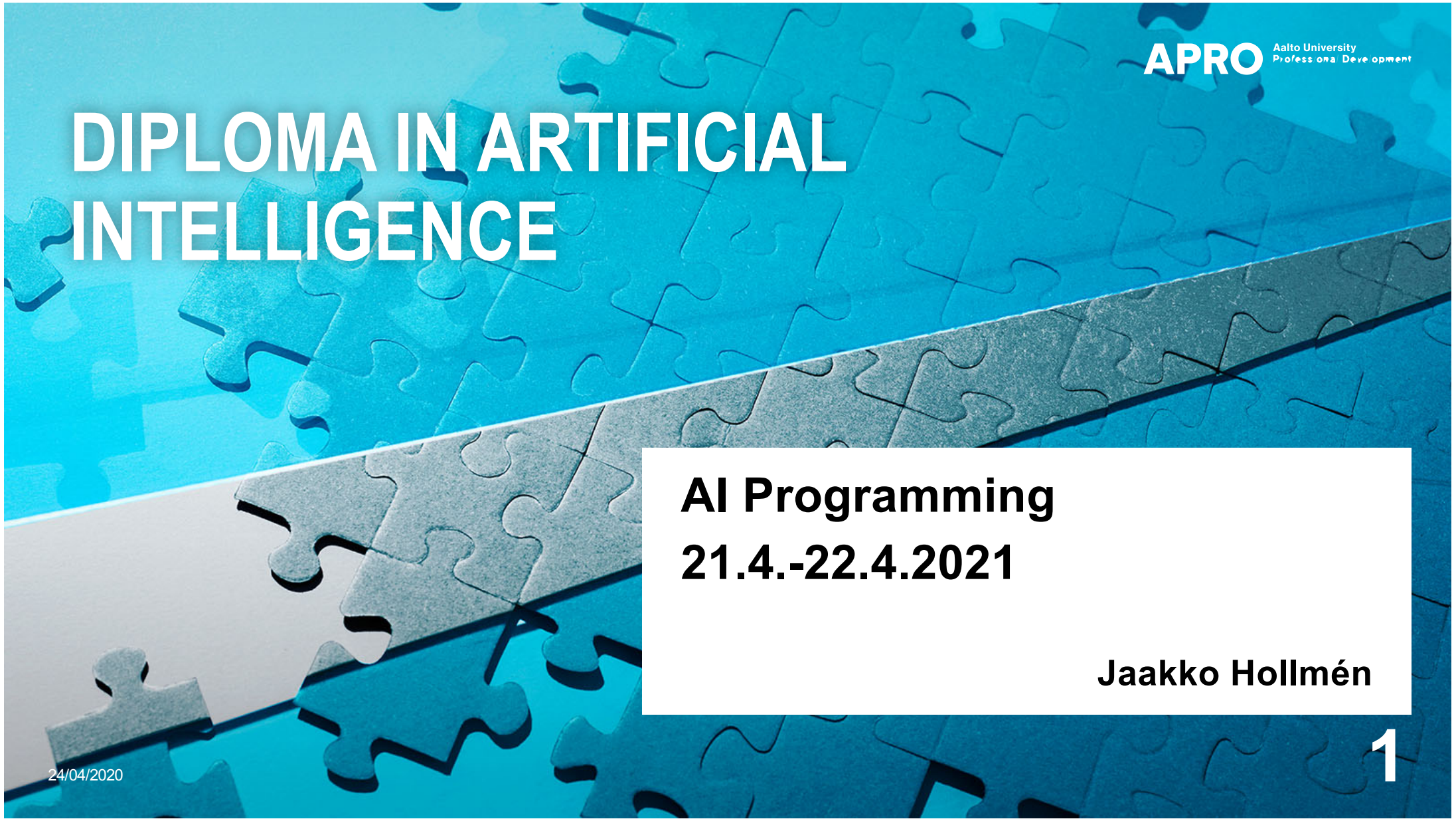
APRO
Aalto University
Professional Development
DIPLOMA IN ARTIFICIAL INTELLIGENCE
AI Programming
21.4.-22.4.2021
Jaakko Hollmén
24/04/2020
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AI PROGRAMMING

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 7: ASSESSMENT OF RESULTS

- This session will be covered on the second day during 13.00-14.00.
- The learning objective is get familiar with different error measures and the assessment of model performance

LECTURE CONTENTS

- Sum of squared errors and the mean squared error
- Coefficient of determination
- Assessment of diagnostic accuracy with ROC curves
- Description of the exercises

SUM OF SQUARED ERRORS (SSE), MEAN-SQUARED ERROR (MSE)

- Error between the true values and predictions must be assessed
- Squared difference is the usual quantity: sum of squared errors for the data set, or an average of that quantity, that is mean squared error
- Always positive, large errors penalized heavily. Smaller, the better.

COEFFICIENT OF DETERMINATION

- Coefficient of determination states how much of the variance is explained by the model
- Larger, the better. Always scaled between 0 and 1.

RECEIVER OPERATING CHARACTERISTIC CURVE

- Receiver operating characteristic (ROC) curve visualizes the trade-off between true positive decisions and false-positive decisions by varying the cut-off point for decision
- Used for assessing diagnostic accuracy (sick-healthy)

EXERCISES

- The exercises are listed in the Jupyter notebook Session-7-assessment-of-results.ipynb
- Work one exercise at the time
- Not all exercises need to be completed

REVIEW OF THE SOLUTIONS

- How do the solutions look like?