Machine Learning Paradigms - Coursework Report

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December 31, 2021

1   Introduction

Motivation and Approach My goal for this coursework was to gain more experience with the various ML algorithms and evaluation methods we've seen during the semester, various different python frameworks available, methods to keep track of experiments, as well as learning more about how to apply good software engineering practices I'm used to from industry to a ML problem. I was less focused on finding the best solution or winning the competition.

I followed the steps laid out on Kaggle and broke them down into the following sub steps:

Phase 1

Predictions of station's 201-275 availabilities for one month by (a) training a model per station or (b) training one model for all stations.

Step 1 Analyse and investigate station's test data

Step 2 Decide on what problem it is. Classification (binary, multi label), Regression, ...

Step 3 Experiment with a few models using approach a (training model per station)

Step 4 Experiment with a few models using approach b (training one model for all station)

Step 5 Tune the more promising potential solutions

Step 6 Submit results

Phase 2

Use the pre-trained models for station 1-200 to predict availability for stations 201-275

Step 1 Analyse given models

Step 2 Experiment with a few approaches

Step 3 Tune the more promising potential solutions

Step 4 Investigate performance

Step 5 Submit results

Step 6 Compare with results from Phase 1

Phase 3

Combine approaches from Phase 1 and Phase 2

Step 1 TODO

I keep referring back to these steps in section: Method, Technical Background, Experiment Setup, Results. The final sections Conclusions gives a summary of my overall learnings and conclusions.

2   Technical Background

Be brief.

Overall approach for engineering python environment setup: [2], experiment tracking: [1]

3   Method

Description of method

Phase 1

Step 1

Goal is to find out what's similar and what's different between the different station.

4   Experiment Setup

5   Results

Results achieved

6 Conclusions

share any insights you gained about how the system works.

Acknowledgements

References

[1] Lukas Biewald. Experiment tracking with weights and biases, 2020. Software available from wandb.com.

[2] Conda forge Community. The conda-forge Project: Community-based Software Distribution Built on the conda Package Format and Ecosystem, July 2015.