

| Wk    |    |            | Title                       | Type     | Topics   | Quiz                                 | Hand in  | Géron (Ed2)                             | Bradski                                  |
|-------|----|------------|-----------------------------|----------|--|--------------------------------------|--|---|--|
| 1.1/A | 35 | 29/8/2022  | Basic principles & set-up   | Theory   | Introduction<br>Organization<br>Why machine learning?<br>Machine learning approaches<br>Learning pipeline  |                                      |  |   |  |
| 1.2/B | 36 | 5/9/2022   |                             | Hands-on | Recap of workshop organization<br>Assignment introduction<br>ML portfolio template<br>How to start? Conditioned acquisition<br>Set-up Raspberry Pi with OpenCV and sci-kit learn |                                      |  | 1-22                                    | 769-779                                  |
| 1.3/C | 37 | 12/9/2022  | Preparing the data          | Theory   | Thinking about data<br>Splitting your data<br>Feature engineering<br>Exploring your data<br>Data preparation   |                                      |  | 23-34<br>35-83                          | 493-498<br>511-512<br>526-545<br>770-771 |
| 1.4/D | 38 | 20/9/2022  |                             | Hands-on | Python primer<br>Numpy<br>Data collection example script   |                                      |  |   |  |
| 1.5/E | 39 | 26/9/2022  | Supervised Machine Learning | Theory   | Classification<br>k-nearest neighbors<br>Support vector machines<br>Decision trees<br>Random forests<br>Bagging and boosting   |                                      |  | 85-109<br>153-162<br>175-178<br>189-208 | 799-848<br>859-864<br>875-906            |
| 1.6/F | 40 | 3/10/2022  |                             | Hands-on | Basic segmentation and feature extraction<br>Splitting your data<br>Exploratory data analysis<br>Feature engineering<br>Data preparation   | 1<br>ML principles<br>Classification |  |   |  |
| 1.7/G | 41 | 10/10/2022 |                             | Hands-on | OpenCV Tutorial  |                                      |  |   |  |
| 1.8/H | 42 | 17/10/2022 |                             | No class |  |                                      |  |   |  |
|       | 43 | 24/10/2022 |                             |          |  |                                      |  |   |  |
| 1.9/I | 44 | 31/10/2022 |                             | No class |  |                                      | Prelim report<br>data acq & prep (start of the week) |   |  |
| 2.1/A | 45 | 7/11/2022  | Regression                  | Theory   | Linear regression<br>Logistic Regression<br>Lasso Regression<br>Classification and regression  |                                      |  | 111-152<br>162-165<br>183-184           | 864                                      |
| 2.2/B | 46 | 14/11/2022 |                             | Hands-on | Sci-kit learn<br>Training a classifier<br>Thinking about performance<br>Hyperparameter tuning<br>Visualizing a Decision Tree   |                                      |  |   |  |

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