

Week 1: Pre-lecture Watching Recommendations

Watching through this list of videos will not take more than 2 hours. It will provide you with important background knowledge about AI/ML/DS, which is helpful in particular for students from MSc AI and Computer Science students and MSc Data Science. If there are topics that you are already familiar with, you can skip watching the related videos. For students on MSc AI and Machine Learning, it's an optional watching recommendation.

Introduction to Machine Learning

https://www.youtube.com/watch?v=f_uwKZIAeM0 (~2 minutes)

<https://www.youtube.com/watch?v=cfSDvPIFFVQ> (~2 minutes)

<https://youtu.be/IL16AQItG1g?si=mWq2o066Hw8PG53k> (~2 minutes)

Introduction to Neural Networks

<https://www.youtube.com/watch?v=rEDzUT3ymw4> (~1 minute)

<https://www.youtube.com/watch?v=bfmFfD2Rlcg> (~6 minutes)

Introduction to Deep Learning

<https://www.youtube.com/watch?v=6M5VXKLf4D4> (~6 minutes)

Introduction to Transfer Learning / Fine-Tuning

<https://www.youtube.com/watch?v=5T-iXNNiwlS> (~5 minutes)

Introduction to Image Classification

<https://youtu.be/tjAIM7BOYhw> (~1 minute)

Introduction to Convolutional Neural Networks (CNNs)

<https://www.youtube.com/watch?v=QzY57FaENXg> (~6 minutes)

<https://bham.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=b184567a-0d98-493b-92f3-b0f400a2ee91&start=341.465394> (~15 minutes)

Introduction to Natural Language Processing (NLP)/NLU/NLG

<https://www.youtube.com/watch?v=1I6bQ12VxV0> (~7 minutes)

Introduction to Long-Short Term Memory (LSTMs)

<https://www.youtube.com/watch?v=b61DPVFX03I> (~8 minutes)

Introduction to Transformers (in Machine Learning)

<https://www.youtube.com/watch?v=ZXiruGOCn9s> (~6 minutes)

Introduction to Training and Testing in Machine Learning

<https://www.youtube.com/watch?v=x2dmBUEKQIA> (~1 minute)

Introduction to Pytorch

<https://www.youtube.com/watch?v=ORMx45xqWkA> (~3 minutes)

Introduction to Google Colab

<https://www.youtube.com/watch?v=inN8seMm7UI> (~3 minutes)

Introduction to Scikit-Learn

<https://www.youtube.com/watch?v=rvVkVsG49uU> (~5 minutes)

Introduction to Linear Algebra

<https://www.youtube.com/watch?v=ml4NSzCQobk> (~5 minutes)

<https://www.youtube.com/watch?v=kYB8IZa5AuE> (~11 minutes)

Introduction to Regression

<https://www.youtube.com/watch?v=CtsRRUddV2s> (~3 minutes)

<https://www.youtube.com/watch?v=zPG4NjIkCjc> (~5 minutes)

Introduction to Probability

<https://www.youtube.com/watch?v=uzkc-qNVoOk> (~8 minutes)

<https://www.youtube.com/watch?v=6xPkG2pA-TU> (~7 minutes)

<https://bham.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=bfc6d351-10f2-4a15-b018-b0f400a3245f&start=0> (~11 minutes)

Introduction to Gradient Descent

<https://www.youtube.com/watch?v=i62czvwDlsw> (~7 minutes)