
# Tutorial Practical Machine Learning

Session 1: Organization & Getting Started

Jesse Grootjen & Maximiliane Windl

# Organization

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# Who Are We?

Jesse Grootjen
PhD Student

Maximiliane
Windl
PhD Student

# Organization Tutorials

Time: Fridays, 10 – 12 c.t.

Format: → Live coding sessions

→ Project ideation/pitches

→ Please participate (ask questions, write in chat, …)

Zoom-Link: uni2work

Material: https://uni2work.ifi.lmu.de/course/S21/IfI/PML

Website: http://sven-mayer.com/pml/

# Exam

The exam will consist of two parts:

- Your practical projects in teams of 3 to 5 students (1/2 of final grade)
- An online oral exam of 10 minutes (1/2 of final grade)

# Final Projects

- You will practically apply what you have learned in the course
- You will develop the project in groups of 3 to 5 students
- You will need to hand in a contribution statement explaining for which parts of the project you were responsible
- Be creative and rather do not try to improve already existing systems
- Building large data sets from scratch is hard! Try using existing ones
- You will present your projects iteratively in project pitches
- You can ask questions/ask for help in the tutorials or send an email
- Project ideation: 11.06. (Tutorial)
- Final presentations: 15.07. (Lecture) and 16.07. (Tutorial, only if necessary)

# Overview Tutorial

23.04.2021 Organization & Getting Started

30.04.2021 Live Coding Session: Getting Started with Traditional ML

07.05.2021 Live Coding Session: Getting Started with Neuronal Networks

14.05.2021 canceled

21.05.2021 Live Coding Session: Deploying Models to Mobile Devices (Android)

28.05.2021 Live Coding Session: Continue

04.06.2021 canceled

11.06.2021 Project Ideation

18.06.2021 Individual Help for Projects

25.06.2021 Project Pitches: Show Current Project Status

02.07.2021 Individual Help for Projects

09.07.2021 How to give a great project presentation; Q&A: Exam preparation

16.07.2021 Final Presentation - only if necessary

# Get to Know Your Classmates

- What is your name?
- What is your study program?
- Where are you?
- Why did you enroll for this course?
- What is your experience with Machine Learning?
- What is the last song you listened to?

Breakout rooms (5 min)

# Getting Started

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# Python

**Windows**

1. Open a browser window and navigate to https://www.python.org/downloads/windows/
2. Under the “Python Releases for Windows” heading, download Python 3.8.0
3. Run the installer

MacOS

1. Open a browser window and navigate to https://www.python.org/downloads/mac-osx/
2. Under the “Python Releases for Mac OS X” heading, download Python 3.8.0
3. Run the installer

Or use Homebrew: `brew install python3`

**Detailed installation instructions:** https://realpython.com/installing-python/

# Installing The Machine Learning Environment

1. Install Anaconda/Virtual Environment (optional) https://www.anaconda.com/products/individual
2. Tensorflow: `pip install --upgrade tensorflow`
3. Keras: `pip install keras`

Detailed Instructions:

→ Windows: https://towardsdatascience.com/installing-keras-tensorflow-using-anaconda-for-machine-learning-44ab28ff39cb (you don‘t have to downgrade Python to 3.6 anymore!)

→ MacOS: https://margaretmz.medium.com/anaconda-jupyter-notebook-tensorflow-and-keras-b91f381405f8

# Jupyter Notebooks

- Open source web application to create and share documents that contain live code, equations, visualizations, and text
- Uses the kernel that you chose when you started your Notebook
- We start it with Python 3 as the kernel, so that means you can write Python code in your code cells

→ You can run the Notebook locally (comes pre-installed if you use anaconda) or simply use Google Colab

→ Detailed instructions: https://realpython.com/jupyter-notebook-introduction/

# Google Colab

- Jupyter notebook based runtime environment which allows you to run code entirely in the cloud
- All you need is a Google account and a web browser
- Most general packages needed for machine learning come pre-installed

→ http://colab.research.google.com/

# Android Environment

Install latest version of Android Studio

→ https://developer.android.com/studio

Or install Jetbrains Toolbox to have all Jetbrains environments in one (they offer free student licenses)

→ https://www.jetbrains.com/community/education/#students

# Questions?

# License