Multimedia Project SoSe 23

Assignment 0

Multimedia Computing Lab
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Submission: None

General Information

- All assignments build on each other
- You will be rewarded points for the assignments
- Your grades will be calculated from the achieved points

Please make sure to read the following carefully:

Assignments are **individual** implementation tasks. This means that you will have to code by yourself. Like every programmer, you may use the internet to find solutions to the various problems that you will encounter throughout this course. However, we will not tolerate plagiarism and license violations. Plagiarism can have serious consequences that go beyond failing this course. Therefore, make sure you are allowed to use the code and properly mark code that you did not write yourselves. Note that we cannot award points for code that you simply copied from any third parties including any of your fellow students.

We strongly recommend participating in the assisted programming courses. Besides that, it is your responsibility to get in touch with us if you encounter any problems.

Assignment Submission

You can fing the submission date on top of each assignment. However, we might deviate from this, so check your e-mails regularly.

You are required to upload your solutions to Digicampus. There will be a submission folder in the files section of the course for each assignment. Use this folder to upload your solutions. Attach all necessary files to run your code

- Source code files (*.py). Jupyter notebooks (*.ipynb) are **not** allowed
- Supplementary files (*.jpg, *.png, *.txt, ...)
- If you are asked to answer a question, explain, report, plot, or visualize something, you are required to submit a report document in pdf format containing the requested details.
- Compress files for each assignment as **ZIP** archive
- Name your submission file `<given name>_<surname>`. If you extract the archive file, the folder has to be named in the same way. Do not use any special German characters in the filename
- If you update your submission, use the exact same filename as before
- In subfolders and python filenames, do not use any special characters despite underscores (_). Do not start file or folder names with a number (in order to ensure python imports from your files)
- Capsule the code that is executed in a main method (`if __name__ == '__main__':`), so that it is not executed if a method is imported from your codefile
- Do not submit your Python Environment or the dataset
- Larger files can be uploaded to https://megastore.uni-augsburg.de. Submit a download link to your files via a text document to digicampus. Do **not** use any other cloud storage or filesharing service than Megastore.
- Most of the time you will get templates for your submissions that already contain some template code. You must not change the function signatures or move them to other files. This may seem a little strict, but it allows for a more thorough correction which will hopefully assist you for future assignments.

Points will be deducted if any of those requirements are not fulfilled.

Assignment Preparation

Set up your environment by installing the following software.

(a) A recent Python 3 distribution. Downloads available at https://www.python.org/. Choose to install pip (package installer for python) during the installation.

(b) Make yourself familiar to the concept of virtual environments. If you don't know what a virtual environment is, see this Tutorial on Python Virtual Environments on Windows or MAC/Linux. Create a virtual environment for your project.

(c) Install the following packages into your newly created Python environment.

- pytorch
- torchvision
- NumPy
- Tqdm
- Matplotlib
- Pillow

Your assignments will be tested in an environment in which only these packages are installed. Your code needs to run in this environment, otherwise you will lose points. Depending on your platform and if you have a nvidia GPU and want to use it, see `https://pytorch.org` for the right command to install pytorch. The torchvision package is also part of pytorch and provides some useful methods to handle images.

(d) Install a suitable Python IDE. We recommend the Pycharm Professional Edition available at `https://www.jetbrains.com/pycharm/download/`. You need to register a student account to get free access. Start Pycharm and create a new project that uses your recently created python environment. You can do this by changing the project interpreter to the python binary that resides inside your virtual environment.
Windows: venv\Scripts\python.exe
Linux: venv/bin/python
We can help you with this IDE, but not with any other one.