Video Analysis – 188.346

Exercise 1 – Introduction to Video Editing

The goal of this exercise is to introduce you to basic techniques in video editing. All of the exercises need to be solved by using a free program called **HitFilm**. The use of this program is **mandatory**. We hope that you enjoy solving the exercises☺. Take a look at the finished videos on TUWEL to get an idea of how the results could look like. If something is not mentioned in the description you can do whatever you like, e.g., you can add other effects, change parameters, etc.

For each of the exercises and tasks you need to hand in your:

- .hfp   files (project files of HITFILM)
- .mp4   files (exported videos - your results)

For this exercise, you also need to hand in **one**

- .txt/.doc/.pdf file (containing your discussion)

Compress all of the above files into a **.zip file** and upload it onto TUWEL until the respective deadline. **You need to solve the tasks by yourself!** If two or more submissions share suspicious similarities, each of you will lose at least 50% of the total points.

For each exercise you can reach a total of **60 points** that are calculated as follows:

- 27 points if you fulfill each task according to the instruction
- 27 points depending on how well and detailed the tasks are implemented
- 6 points for the discussion including the reflections upon your work

Download and Install HitFilm

https://fxhome.com/product/hitfilm

Click onto the Button "Download Free" and create an account. Follow the instructions on the page to download HitFilm for either Windows or Mac. When you open the program for the first time there will be a short introduction, you can skip this if you are already familiar with editing tools. Now you are ready to start with the exercise ☺.

Task 1 – Introduction to HitFilm (10 points)

First you can hide the Learn Tab by toggling the Learn button in the top left
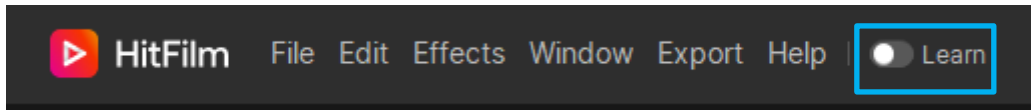
A new project in HitFilm is created by clicking onto File/New. Just leave the parameters as they are and click on "Start Editing". You will see that the program has different areas for different reasons. Your screen will look somewhat like this:
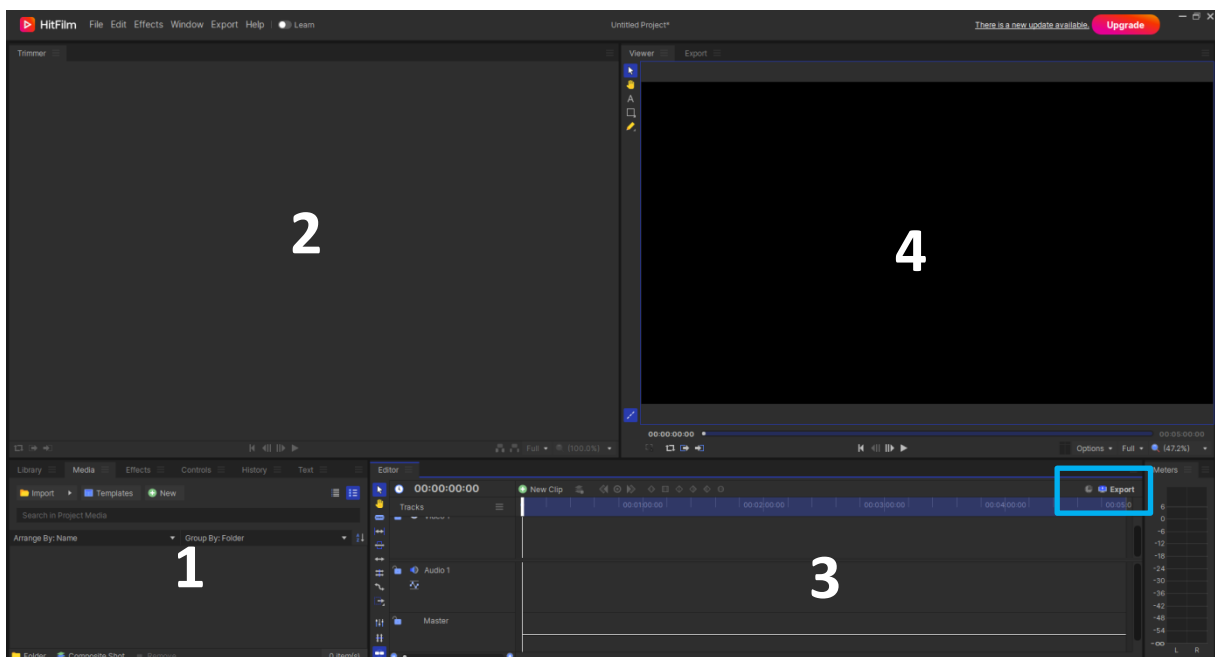

Region 1 allows you to, for example, import video-files or add effects to the project. You can simply drag videos into this area to import them. As soon as you import a video, you can trim it and select the desired part of the video in region 2. By clicking "i" on the keyboard you set the start frame and by clicking "o" you set the end frame for the editing. You can press the play/pause button or drag along the bar to "navigate" through the video. By dragging the video from region 2, the trimmed version can be moved to region 3 for the editing. If you want to add effects to the video, you need to right-click the dragged video and select "Make Composite Shot" (or press Strg+M). This will be important soon. Region 4 gives you an overview of how the results will look like. The blue rectangle marks the button where you can export your results. By clicking onto this button your video is going to be added to an "export queue". By clicking the button "Start Exporting" on the bottom, the video gets exported into an, e.g., .mp4 file. You can change the export path in the "export queue".

Steps for Task 1

- Import "UsainBolt.mp4".

- Trim the video. It should begin when the race starts and end after they cross the finish line (about second 30 to 50).

- Drag the trimmed video into region 3 for the editing.

- Unlink the video and audio (context menu by right-clicking will help).

- Remove the audio. (If you are not able to select just the audio track, delete both and press Strg + Z, then the audio track should be selectable)

- Replace the audio with "Bumblebee.mp3".

- Trim the audio to the same length as the video (this can also be done in region 3 by hovering over the end of the audio and dragging the blue cursor that appears then).

- Set the correct start and end frame for the export (works similar to the trimming of the video).

- Export the video – the length of the video should be around 20 seconds if you have done the previous steps correctly.

Task 2 – Introduction to Effects in HitFilm (10 points)

After you import a video you can directly make a "Composite Shot" of it to add effects. This can be done by right-clicking onto the video => "Make Composite Shot".
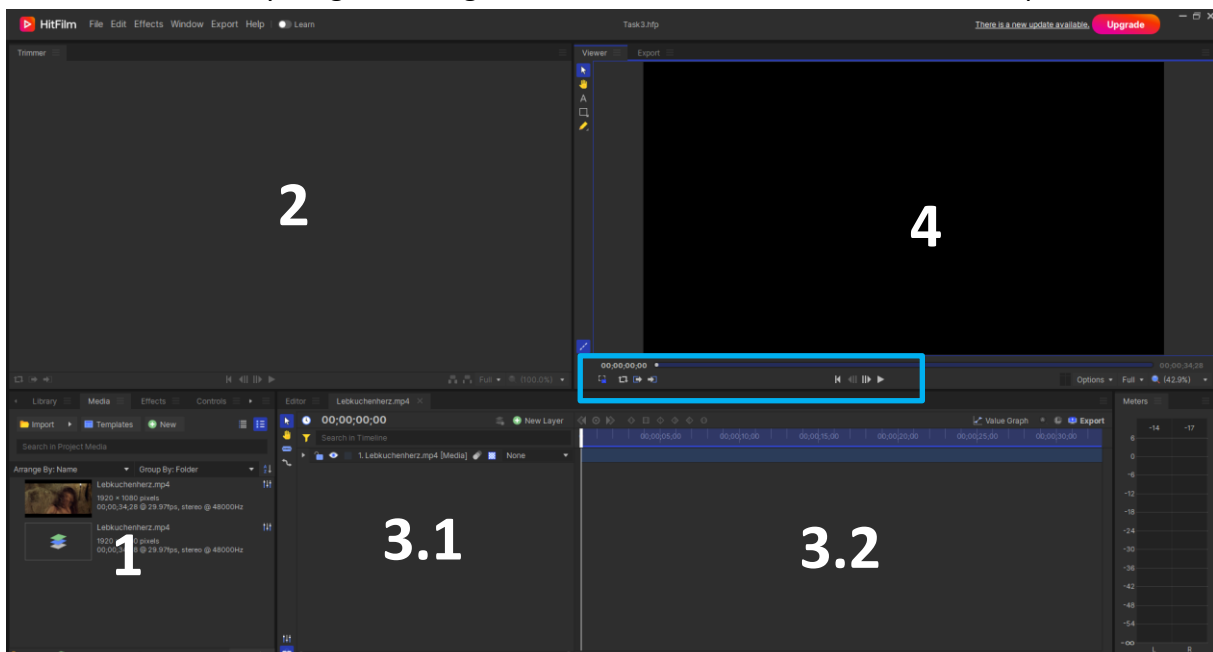
By doing so, region 3 splits up into two parts. Region 3.1 contains the layers for the editing. After making a composite shot of a video, this video is the first layer in this region. Effects etc. are placed on this layer or other layers. Make sure that the video stays the lowest layer because otherwise, you will not be able to see the effects. Each layer can be expanded over the little triangle to the left of it (left to the blue eye in region 3.1). It enables you to change the parameters of certain effects or something similar. The buttons in the blue rectangle allow you to preview your resulting video. Region 3.2 shows the different timelines for each of the videos or effects in your composite shot. Region 1 allows you to select effects for the video via the corresponding tab. You can search for different effects by entering the name of it. If you want to add an effect you need to drag the effect onto the layer in region 3.1. Make sure that the effect is placed above the layer of the video in the background. Some effects do not need an extra layer as they get included into the video layer.

Steps for Task 2

The goal of this task is to turn a video that was taken during the day into a night shot.

- Import "River.mp4".

- Make a composite shot out of it.

- Add the "Day for Night" effect.
  - Change the horizon and the near brightness.

- To add a fake moon to the water, add a "Light Flares" effect.
  - Position it in the water anywhere you like.
  - Change the flare type to "Flashlight LED".
  - Change the blend to "Softlight".
  - Play around with the intensity and the scale.

- Feel free to play around with other parameters and take a look at other blend modes to see their impact. The blend mode is one important parameter to integrate effects. Your video will probably look similar to this:
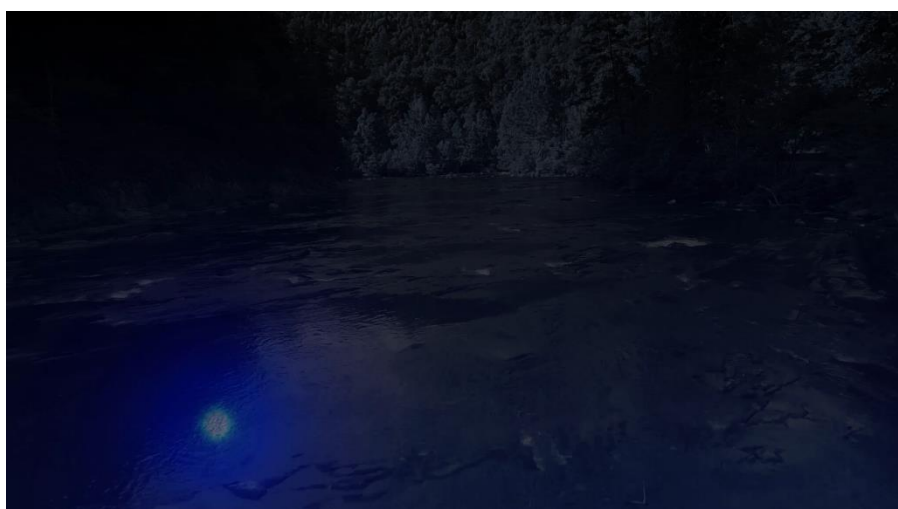
- Let's try to make the moon look a little more realistic, shall we? ;)
    - Add a new black layer. The preview should be completely black.
    - You can change the blend mode of the black layer by right-clicking onto the layer. **Select an appropriate blend mode**. (If you are not familiar with blend modes you can read up the summary [here](#))
    - Move the "Light Flare" to the new layer. If it is invisible you need to adapt the blend mode of the "Light Flare".

    - Change the moon color to white. You might need another effect for this.
    - Add a "Displacement" effect and use the video footage beneath as the "Source Layer". The light flare will now be displaced based on the underlying structures.
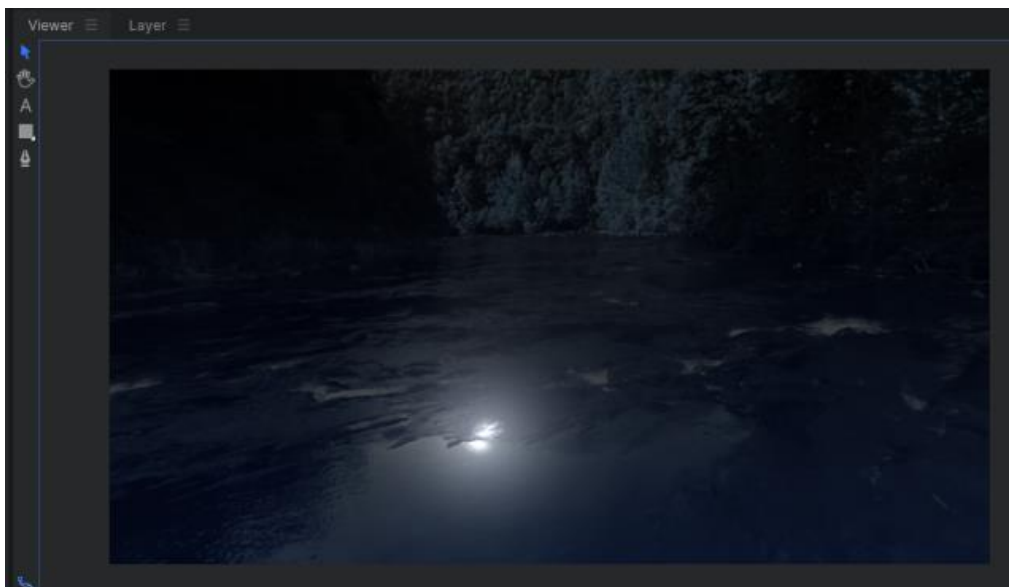

Discussion

- Discuss your results! Describe differences to the solution in TUWEL! What do you like about your result and what could be improved? (Only hand in one file for all discussions of this exercise!)

Task 3 – Keyframing (10 points)

In this task, we are going to use keyframing to change certain attributes of different effects over time. You need to define a few keyframes by hand and HitFilm interpolates between them. Each of the attributes of different effects can be changed over time. To activate keyframing you need to expand the effects in a composite shot to see the parameters. You can activate keyframing by clicking onto the light gray circles for each attribute (see the image below).
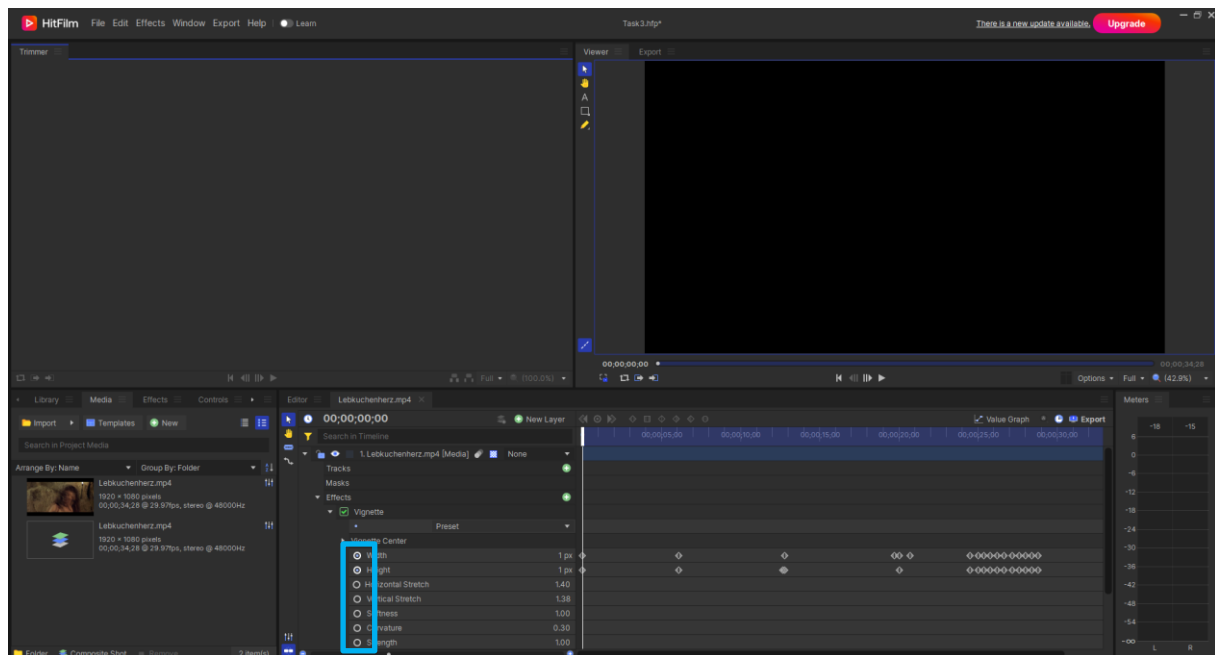
Steps for Task 3

In this task, we are going to give the video a more "western-style" look.

- Import "Lebkuchenherz.mp4".

- Add a "Color Temperature" effect and visibly increase the temperature.

- Add a "Vignette" effect and play around with the parameters.

- Keyframe the horizontal and vertical stretch of the vignette.

- Visibly increase or decrease the stretches of the vignette at least 3 times in the video.

Task 4 – Text and Point Layouts (15 points)

HitFilm allows you to add text to your videos by creating a new text layer while you are in a composite shot. In region 3.1 (after you made a composite shot), simply click onto "New Layer" and add a "Text" layer.

Point layouts allow your effects to follow a given path. A point layout can be created by adding a new "Point" layer. You can now keyframe the position of the point layout via the light gray circle at the parameter for the position. You can now press "." (dot) or "," (comma) to navigate through the video frame by frame. Via the red and green arrows you can adjust the point position for each frame according to your "target".

Steps for Task 4

- Import "HarryPotter.mp4".

- Make a composite shot of it.

- Include text.

  - Add a new "Text" layer.

  - Type in "Harry Potter" and change the font, size, color, etc.

  - Add the "Heat Distortion" effect or another one of the effects in the "Distort" folder.

  - Keyframe the "Scale" property. Start with a higher scale, keyframe it, and let it fade out with a higher scale at the end, again.

  - Also, keyframe the opacity of the text layer with the scale from before so that the text fades in and out.

  - Keyframe the position of the text layer. Let the text move a little.

- Include a point layout

  - Go to the frame where Harry is starting to cast his spell.

  - Add a new "Point" layer.

- You can zoom into region 4 (the video preview) with the mouse wheel and move around with the right mouse button. If you accidentally use the left mouse button, you move the entire video out of the frame. Press Strg+Z if this happens.

- Set the position to the tip of his wand by left clicking onto the arrows that appear in region 4 in the preview.

- Keyframe the position like in the task before by clicking onto the light gray circle at the parameters.

- Navigate through the video frame by frame via "." and "," and adjust the position so that it follows the tip of the wand. Your finished point layout should look similar to this:
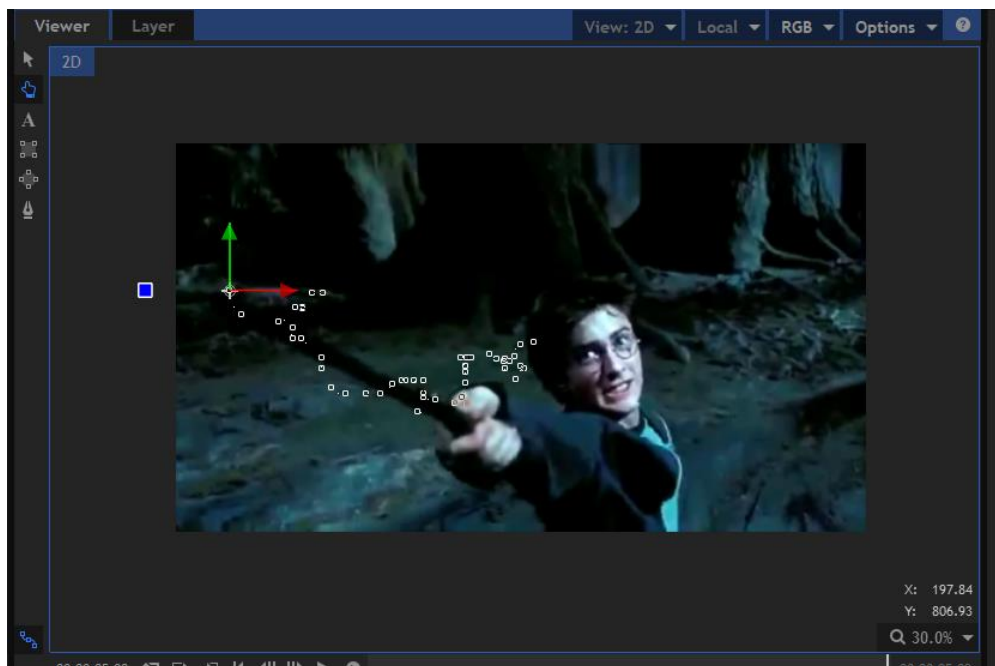
- Add a new "Plane" layer with a transparent color.

- Add the "Light Flares" effect.

- Open up the parameters of the effect in region 3. Set the flare type to "Flashlight LED".

- Under "Hotspot Position" zero out the center and under "Use Layer" select your point layout. Now the effect should follow the tip of the wand.

- Under "Global" you can select whatever parameters you like. I selected a white color and changed the "Saturation" to about 0.2 to get a completely white effect.

- Keyframe the "Scale" of the light flare effect itself and of the "Hotspot" of the light flare and the opacity of the plane layer. The effect should fade in and become larger until the end of the video.

Discussion

- Discuss your results! Describe differences to the solution in TUWEL! What do you like about your result and what could be improved? (Only hand in one file for all discussions of this exercise!)

Task 5 – Masking + Glow Effect (15 points)

Masking allows us to select certain areas of the video and, e.g., hide them or show effects only in these parts. Masking can be done in region 4 (see images above) in a composite shot. Different tools on the left side in region 4 allow the selection of masks. HITFILM allows you to, e.g., use a rectangular, circular or a freehand mask. The control points of the mask can be selected and repositioned with the mouse (left mouse button) in region 4 directly in the preview video. You can also keyframe the position of the controlpoints. By clicking "." (dot) or "," (comma) on the keyboard you can navigate through the video frame by frame and reposition the controlpoints.

Steps for Task 5

In this task, we are going to animate a lightsaber.

- Import "Jedi.mov".

- Make a composite shot.

- Add a new white plane layer. Make sure that this layer is above the Jedi.mov layer and you only see a white plane.

- Turn down the opacity of the plane layer to zero and set the scale to 110%.

- Zoom into the preview video in region 4.

- Move the preview video so that you see the lightsaber (right mouse button).

- Select the freehand mask tool in region 4.

- Select 4 keypoints along the lightsaber.

- Navigate through the frames with "." on your keyboard.

- Readjust the keypoints every third or fourth frame.

- Go back to the beginning of the video and step through it frame by frame again and manually correct the controlpoints if necessary.

- Turn the opacity of the plane layer back to 100%. You should now see a white rectangle above the lightsaber.

- Add a "Neon Glow" effect to the plane layer **in whatever color you** like.

- Add a second "Neon Glow" effect with a larger scale and a lower intensity for a more realistic look. (Mind which blend mode you are using)

- Your finished lightsaber should look similar to this:

Discussion

- Discuss your results! Describe differences to the solution in TUWEL! What do you like about your result and what could be improved? (Only hand in one file for all discussions of this exercise!)