

Git commands

```
git pull
git push
git checkout -b {{name_of_new_branch}}
```

Do "git branch" but ignore all cc\_ and rcc\_ branches

```
dvc-cc git branch
```

To take a look at the result branch you should use the gitlab or github webinterface, but you can switch to the result branch for example with:

```
git checkout rcc_0001_expname_A1
```

Create for each remote result branch a local branch:

```
dvc-cc git sync
```

Show all nodes from the cluster

```
dvc-cc status --node
```

With **dvc-cc status** you can see your last experiments. The following parameters exist:

- p 23 shows all jobs from the 23. run
- s summaries the output
- n 20 shows the last 20 experiments.
- f shows only failed
- d shows details
- detail-unchanged show all details

Run experiments with **dvc-cc run {{experiment name}}**

If you have hyperparameters, you will be asked to set values for the hyperparameters. For this, you have multiple options:

- Use one value: i.e.: 412
- Use multiple values: i.e.: 412, 512, 612
- Use GridSearch with --gs: i.e.: min Value 5, Max Value 20, Num of draws 4, is the same as writing "5,10,15,20"
- Use RandomSearch-Global with --rs: If you use this for all parameters, you will get asked ones, how many draws you want to do. This is the absolute value of experiments that will be created.
- Use RandomSearch-Local with --rsl: you will get asked every time how many draws you want to do. It will do a GridSearch over all drawn parameters.

## Legende:

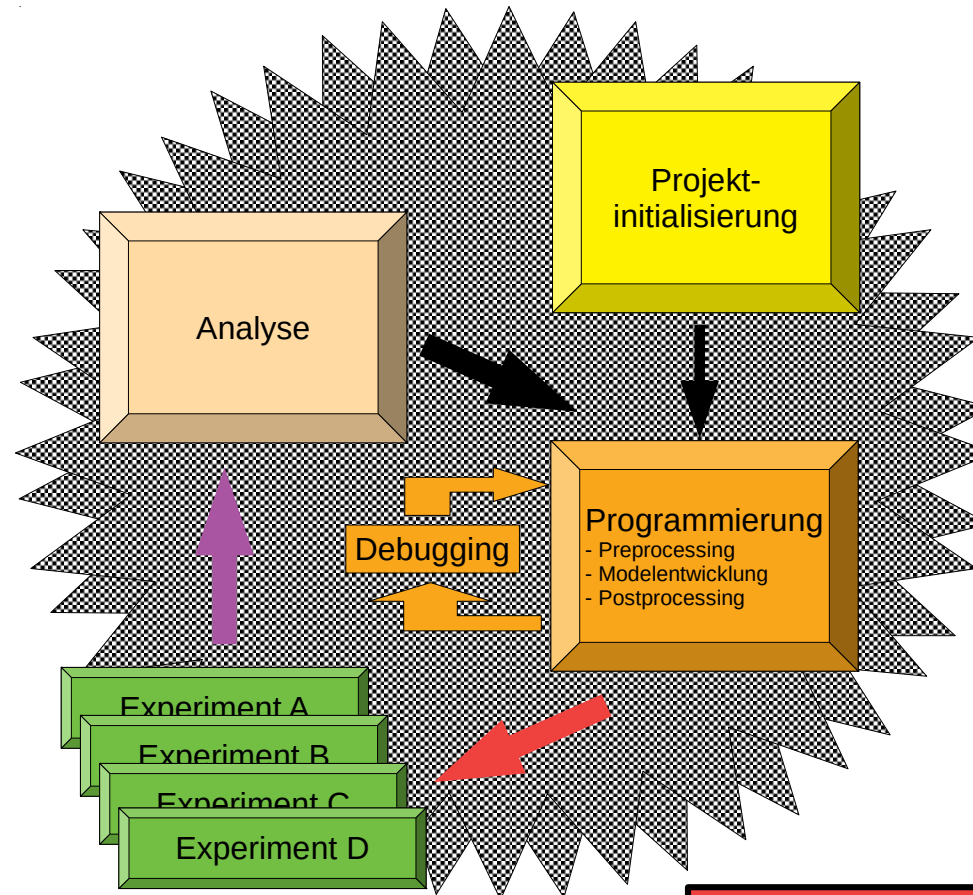
 main ML / DL workflow

 bash command

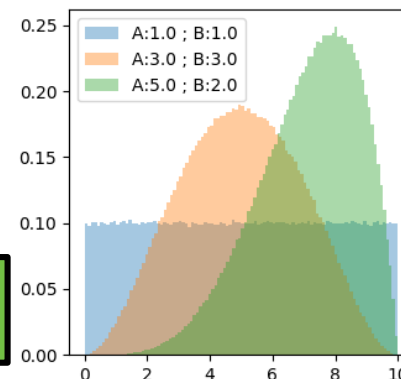
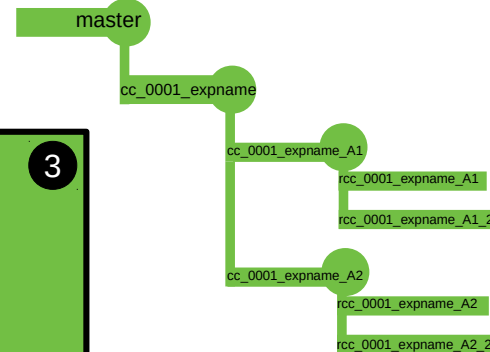
1 - 6 typical dvc-cc workflow

Get output files

```
dvc-cc output-to-tmp outputfile -p ID
```



Branches that get created by calling **dvc-cc run -r 2 expname** And choosing A to be 1,2



Show different beta curves

```
dvc-cc hyperopt plot-beta
```

## SSH-Connection

```
mkdir data
sshfs {{username}}@{{remote-storage}}:{{path-to-data-folder}} {{path-to-project}}/data
```

## SSH-Remove-SSHFS-Connection

```
fusermount -u {{path-to-project}}/data
```

## Zwischenspeicherung des git-Passwortes für 30 Minuten

```
git config --global credential.helper store
git config credential.helper cache 1800
```

## 1. Create a Git-Repository

### 2. dvc-cc init

Set all parameters for the cluster or the Hardware that you need.  
[https://github.com/deep-projects/dvc-cc/blob/master/dvc-cc/tutorial/\\_settings.md](https://github.com/deep-projects/dvc-cc/blob/master/dvc-cc/tutorial/_settings.md)  
 Hint: If a software is not installed in the docker container, you can write your software dependencies to the "requirements.txt".

When you call **dvc-cc run {{expname}}**, the jupyter notebook files are converted to py files. You can use **"""dcs"""** to execute some code only on the server, or use **#dch** to execute code only locally in the jupyter notebook.

```
In [ ]: 1 import argparse
2
3 parser = argparse.ArgumentParser()
4 parser.add_argument('-A', '--valueA', type=int, default=None)
5
6 """dcs
7 args = parser.parse_args()
8 """

In [ ]: 1 #dch
2 args = parser.parse_args('-A 5'.split())
```

## For reducing the typing you can use:

```
dvc-cc hyperopt new-suggest
```

## Define a stage of the pipeline with **dvc-cc hyperopt new**:

This will create a ".dvc" file in the "dvc" folder or a ".hyperopt" file in the "dvc/.hyperopt" folder. To delete a stage you can safely remove this file.

name	saved in git	saved in dvc cache	save the checksum	description
-d	False	False	True	You use this to define dependencies (inputs) or everything from what this stage depends on.
-o	False	True	True	Large output files or folders
-O	True	False	True	Small output files or folders
-m	True	True	True	Metrics are output files but have a special feature that you can use with <code>dvc metrics show</code>
-M	True	False	True	Metrics see above. Find more information about metrics <a href="#">here</a> .

i.e.: **dvc-cc hyperopt new -d code/train.py -o tensorboard -m summary.yml -f train.py "python train.py --valueA {{A}}"**

Overview over all parameters:

```
dvc-cc hyperopt var all
```

Set a value to a hyperparameter:

```
dvc-cc hyperopt var --set 100 A
```