

Minimal ML Project Ecosystem & Terminal Cheat Sheet

ML Project Ecosystem & Command Reference

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# Minimal ML Project Ecosystem and Command Cheat Sheet
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```
## Project Folder Structure
```

```
...
```

```
my_ml_project/  
  data/                # Raw data files  
    README.md  
  notebooks/          # Jupyter Notebooks  
    EDA.ipynb  
  scripts/            # Python scripts  
    train_model.py  
  models/             # Saved ML models  
    README.md  
  environment.yml      # Conda environment definition  
  .gitignore           # Ignore .pyc, checkpoints, etc.  
  README.md           # Project description  
...
```

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```
## Environment Setup
```

```
### 1. Create and activate environment
```

```
```bash  
conda create -n ml python=3.10
conda activate ml
```
```

```
### 2. Install libraries
```

```
```bash  
conda install numpy pandas scikit-learn matplotlib seaborn jupyterlab ipykernel
pip install xgboost lightgbm catboost
```
```

```
### 3. Save environment
```

```
```bash  
conda env export > environment.yml
```
```

```
### 4. Reactivate later
```

```
```bash  
conda activate ml
```
```

```
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```

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Memory-Efficient Workflow (Mac)

When Working

```
```bash
conda activate ml
jupyter lab &
```
```

When Done

1. Save notebooks
2. Shut down kernels in Jupyter
3. Close browser tab

4. Run:

```
```bash
conda deactivate
exit
```
```

5. Quit VS Code and Terminal to free memory

GitHub + Copilot Setup

Initialize and Push

```
```bash
git init
git remote add origin <repo-url>
git add .
git commit -m "Initial commit"
git push -u origin main
```
```

Enable Copilot

- Install GitHub Copilot extension in VS Code
- Sign in to GitHub
- Start coding!

Terminal Command Cheat Sheet

| Task | Command |
|-----------------------|----------------------------------|
| Change directory | <code>`cd path/to/folder`</code> |
| List files | <code>`ls`</code> |
| Print current path | <code>`pwd`</code> |
| List all with details | <code>`ls -la`</code> |
| Clear terminal | <code>`clear`</code> |
| Create directory | <code>`mkdir data`</code> |
| Create new file | <code>`touch file.py`</code> |
| Open file (nano/vim) | <code>`nano file.py`</code> |

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| | | |
|-----------------|------------------------------|--|
| Remove file | `rm file.py` | |
| Copy file | `cp file.py ../dir/` | |
| Move file | `mv file.py ../dir/` | |
| Show disk usage | `du -sh folder/` | |
| Show free space | `df -h` | |
| Search in files | `grep 'pattern' *.py` | |
| Count lines | `wc -l file.csv` | |
| Monitor system | `top` / `htop` | |
| Zip folder | `zip -r archive.zip folder/` | |
| Unzip | `unzip archive.zip` | |

Tips

Combine commands:

```
```bash
```

```
cd data && ls -la | grep csv
```

```
```
```
