

# Photogrammetry 3D scanning on Linux

## Software

\* MVE + Meshlab \* Colmap + Meshlab (funguje i na Windows) \* VisualSFM + Meshlab \* OpenMVG? \* bundler+pmvs2? \* e-foto?? \* Agisoft PhotoScan (placeny SW, funguje na Linuxu) \* 3df zephyr FREE (jen Windows)

## Postupy

### Meshlab

- Filters → Remeshing → Screen Poisson Surface Reconstruction (prej nema moc smysl depth >15, osobne sem pouzival cca 11-12)
- Filters → Smoothing, Fairing, Deformation → Laplacian Smooth
- Filters → Remeshing → Simplification: Quadratic Edge Collapse Decimation (100k faces = 5MB soubor, 200k = 10MB, atd...)

### MVE

```
makescene -i ./img ./scn
sfmrecon ./scn
dmrecon -s2 ./scn
scene2pset -F2 ./scn ./scn/pset-L2.ply
fssrecon ./scn/pset-L2.ply ./scn/surface-L2.ply
meshclean -t10 ./scn/surface-L2.ply ./scn/surface-L2-clean.ply
```

### Colmap CLI bez NVIDIA + pmvs2

```
mkdir img out
nice colmap automatic_reconstructor --image_path img/ --workspace_path out/
#--use_gpu 0
colmap image_undistorter --image_path img --input_path out/sparse/0 --
output_path out/dense --output_type PMVS
pmvs2 out/dense/pmvs/ option-all
cd out/dense/pmvs/models
meshlab option-all.ply
```

### OpenDroneMap

```
docker run -it --rm -v $(pwd)/code/images:/code/images
opendronemap/opendronemap --mesh-size 100000 --force-ccd 1 --help
```

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