

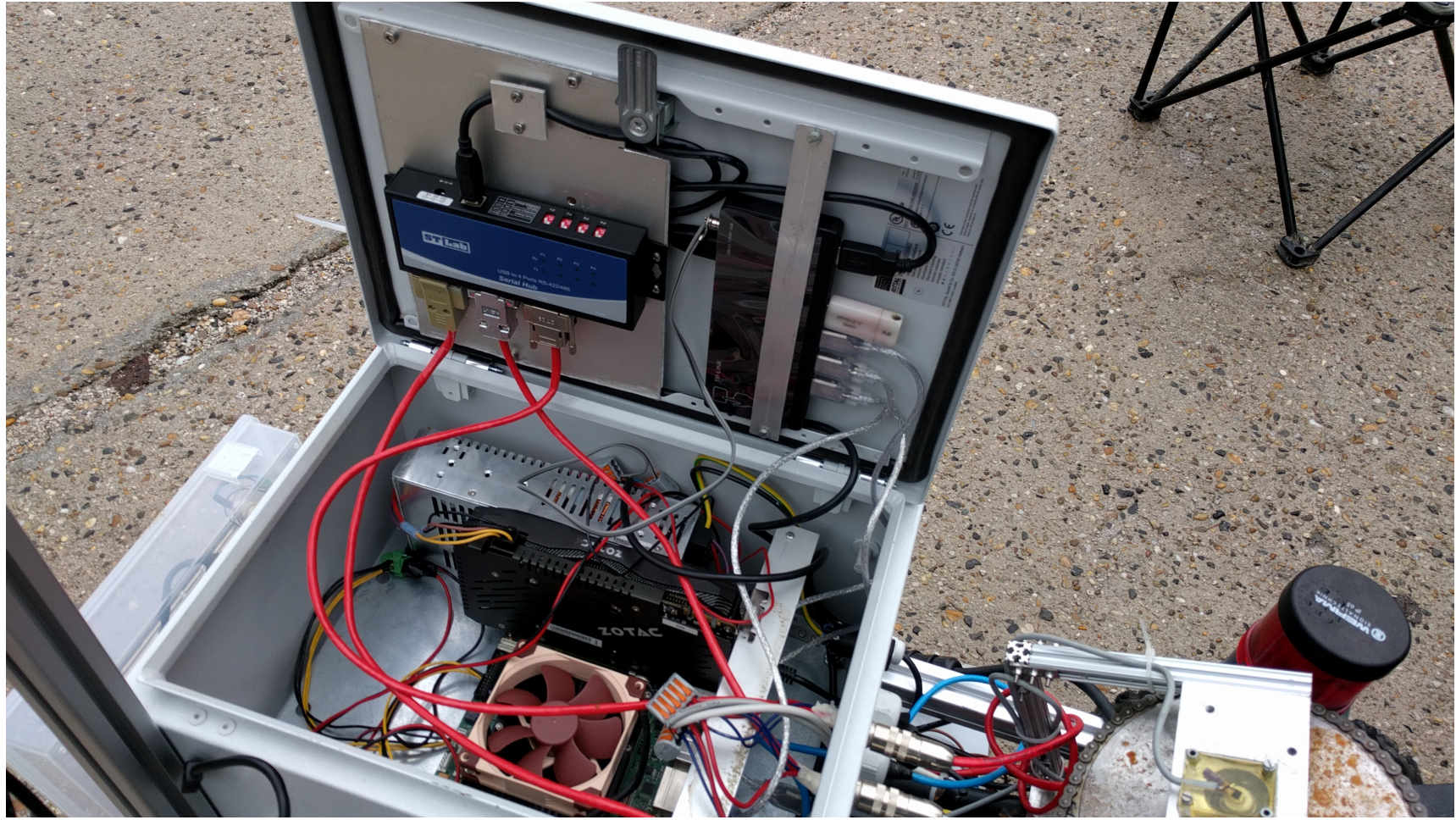
Fesl



Components – GPS, Compass, Camera



Components – Main PC



Components - Motorcontrol



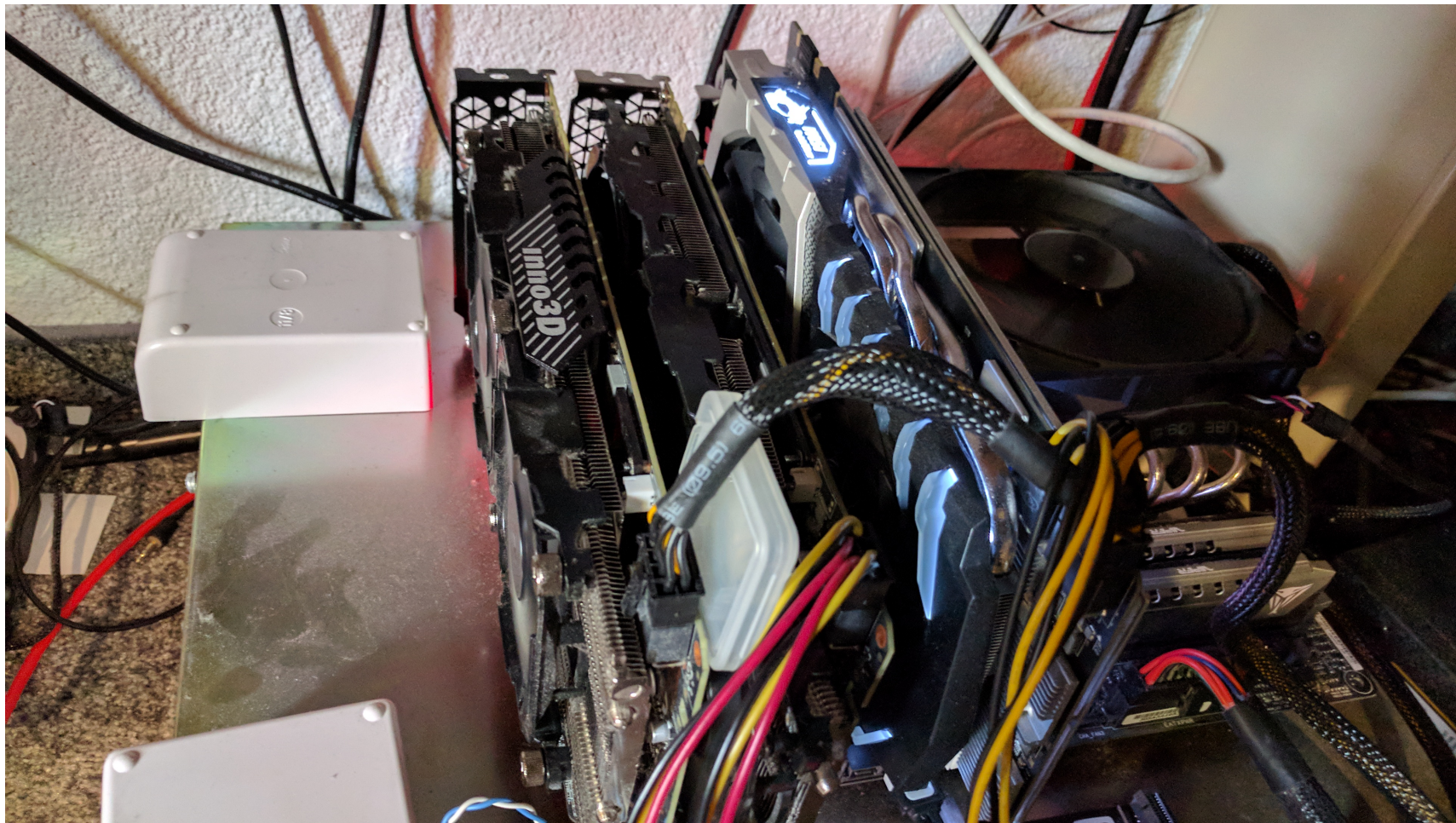
Software Stack

- Global Planning: Open Source Routing Machine
- Local Planning: DNN+3D Pointcloud, Lidar
- Close obstacle avoidance: Lidar only

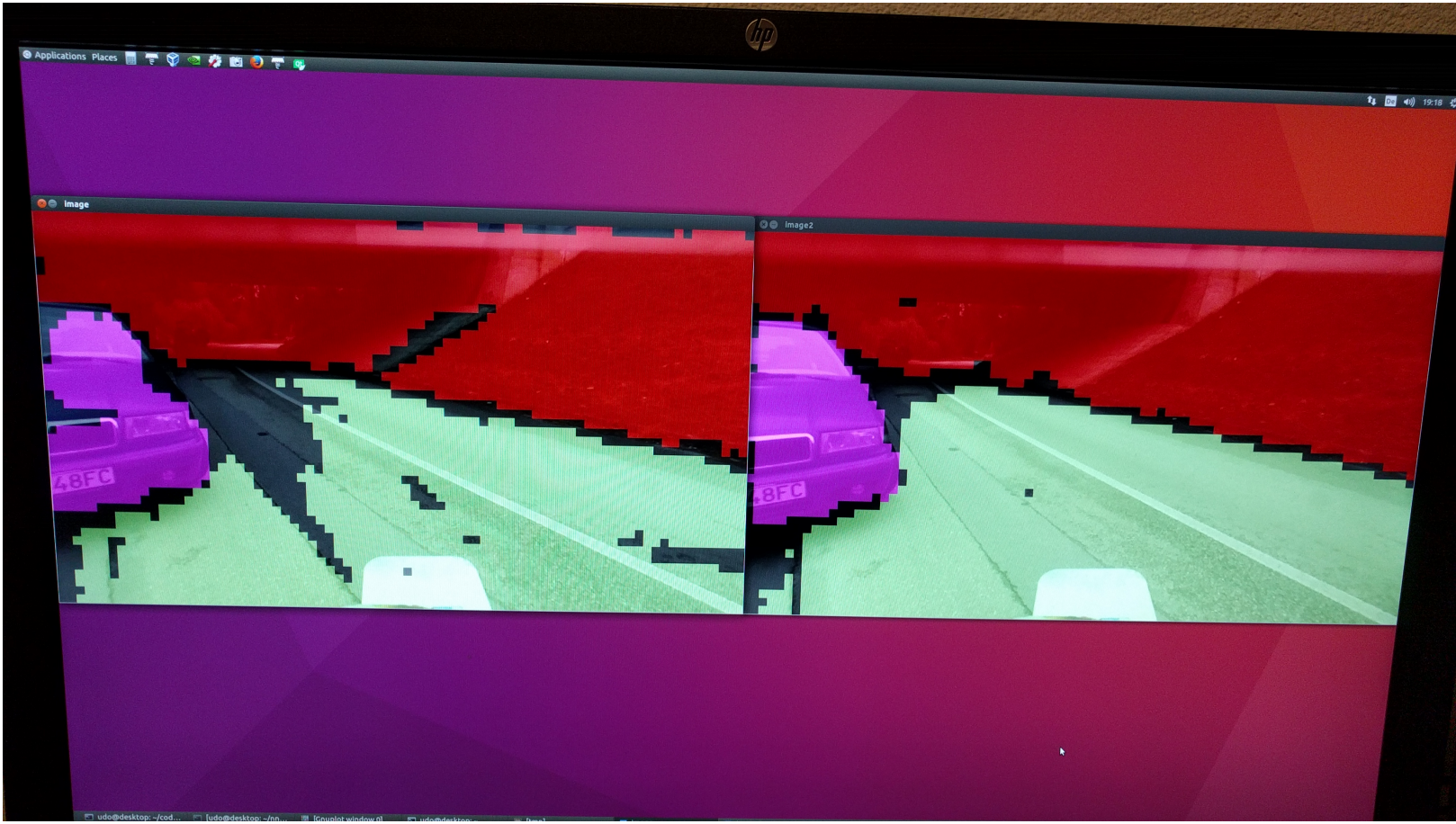
Neural Network

- Image Segmentation
- Input: RGB, 640x360
- Output: class probabilities, 80x45
- Classes: Drive-able, Pedestrian, Bike, Vehicle, Undrivable
- Based on Resnet
- Dataset: Cityscapes, CamVid, Kitti, Udo's best
- Inference: 16ms on GTX1050ti
- Layers: about 30

Neural Network - Training



Neural Network – Going Unsupervised



Neural Network – Going Unsupervised



Neural Network – Going Unsupervised



Fesl's Problems

- Worn out due to many kilometers ;-)
- Speed encoder
- Power electronics
- Stereocamera in light
- No real understanding of what a road is