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Final Assignment: Beyond Peak Performance

5LSM0: Neural Networks for Computer Vision

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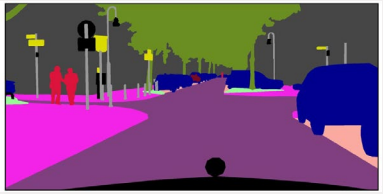
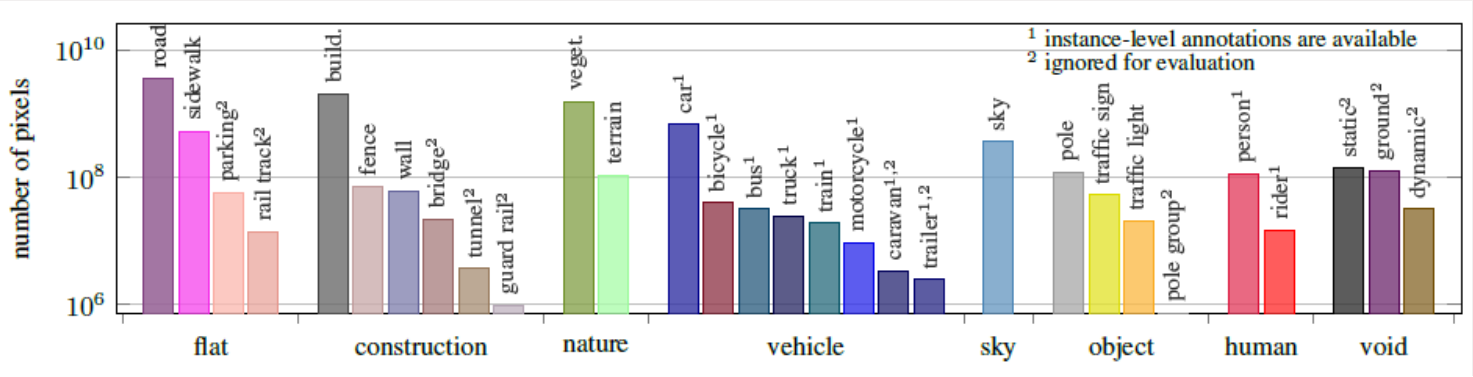
Overview

- Working with real-world problem, going beyond the general computer vision challenges
- Get a good basis for future computer vision projects
- Individual assignment
- **50% of your final grade!**
- **5LSM0 Cityscapes competition!**

CityScapes segmentation dataset

- Training set includes 30 Classes
- Evaluation on 18 classes (see figure)
- Check weekly notebooks for parts of your code





Competition Benchmarks

Peak Performance

- Open for submissions!
- Try to make at least one working submission before March 12th

Robustness

- Closed for submissions!
- More information March 12th during computer class

Efficiency

- Closed for submissions!
- More information March 12th during computer class

Out-of-distribution

- Closed for submissions!
- More information March 12th during computer class

Deliverables (exact details on Canvas)

1. 4-page IEEE format research paper

2. Public GitHub repository with all code

3. At least one working solution on the “Peak performance” benchmark and 1 other benchmark. Of course, you can also submit on multiple benchmarks!

Starting Kit

- Install MobaXterm or any other SSH client software
- See the Snellius introduction slides at Canvas for extra information
- GitHub repository to keep you going
- The files to run parts of your code on Snellius are included and you don't have to change anything for this
- If you face any problem, let us know as soon as possible. Don't waste to much time getting started!

Tips

- **Start early!** Since working with a HPC will be new to most students we will offer as much guidance as need. However, this will only work if you start well on time with the assignment.
- **Check Weights and Baises for model training logging!**

- **Try to define a good baseline for comparison!** This will be your starting point and improvements need to be compared against this baseline implementation

- While achieving high rankings on the competition leaderboards is nice, **it's essential to remember that this is still a research project.** Formulating a research question, thoroughly understand the challenges at hand, and come up with innovative solutions are paramount.