Call for help from the data science community: Evaluate tradeoffs in data quality for mapping parking data in OSM

The volunteer project “Parkraumkarte " shows that OSM data can be used to calculate the available roadside parking space with very high accuracy.

Our controlgroup counts showed that the accuracy of the data for Neukölln is only 0,4 %. [See this table of our control counts](https://supaplexosm.github.io/strassenraumkarte-neukoelln/parkraumkarte/report#anhang-b-vergleich-interpolierter-und-gez%C3%A4hlter-stellpl%C3%A4tze-stra%C3%9Fenparken).

However, this accuracy comes at a cost. It requires a very high level of detail of mapped data. To learn more about the process, please [watch Alex’ presentation](https://supaplexosm.github.io/strassenraumkarte-neukoelln/posts/2021-06-08-vortrag-fossgis) and [read his report](https://supaplexosm.github.io/strassenraumkarte-neukoelln/parkraumkarte/report).

The question is…

What are the tradeoffs if we remove some accuracy from this process? We want to find the way of mapping with the least effort but the highest accuracy. Or in other words: We want to see how much accuracy every step of the process adds.

This will likely be different for different parking styles. For example, parking perpendicular requires a higher level of mapped details since more cars will be added/removed per meter, so the error rate will be higher.

The current process

(Again, please check out the video and report for details.)

Step 1: The highway lanes are already present, as are basic junctions
Step 2: We add parking:lane tags to the lanes
We only cut the lanes when absolutely necessary. We rely on subtracting space by tagging it, rather than cutting lanes in small pieces.

Now we add data, that we use to accurately subtract non-parking space:

Step 3: We map pedestrian junctions as node on the way
Step 4: We enright the pedestrian junctions nodes with information about the type of protection
Step 5: We add trees, traffic signs, street lights, street cabinets where those objects will prevent a car from using the parking space.
Step 6: We map street side parking spaces that have a curb separately, which allows us to more accurately model “budges” with trees or just grass.
Step 7: We add parking spaces for bikes or motorcycles that are place on the street
Step 8: We add all driveway, especially private ones, that have a lowered curb or disallow parking by signage or other means.
Step 9: We move the parking lane per side from the center of the road to the curb, which slightly changes the geometry and length.

TODO ALEX: WAS NOCH?

Those are the cutoffs that we use:

- Crossing (Step 1): TODO
- Pedestrian Crossing (Step 3, 4): TODO
- Driveways (Step 8):
- TODO Was noch?

Possible report structure

TODO ALEX: WELCHES GEBIET WÄRE GUT?

Compare the effect on the accuracy of the model for the different levels of detail (step 3 to 8).

1. For a small area of Neukölln. For example TODO.
2. And for a typical street of Neukölln which is about 100 m long. For example TODO – am besten eine, wo du nachgezählt hast.

This report should pay special attention to the direction of parking. We already know that diagonal and perpendicular parking have a big effect. Small inaccuracies result in quite a few more or less cars.

The report should show how much accuracy every step of the process adds.

This would allow us to adjust mapping recommendations for other volunteers who want to provide this data for their district or city. This would also allow to talk to the city administration with more confidence in our data quality and process which in turn makes it more likely that the data will be used for good there.