RoadTracer: Automatic Extraction of Road Networks from Aerial Images

Favyen Bastani, Songtao He Sofiane Abbar, Mohammad Alizadeh, Hari Balakrishnan Sanjay Chawla, Sam Madden, David DeWitt

Below, we show images of road networks inferred by DeepRoadMapper, our segmentation method, and RoadTracer in the 15 test cities. We overlay the inferred graph (yellow) over ground truth from OpenStreetMap (blue). As in the paper, inferred graphs correspond to thresholds that yield 5% average $F_{\rm error}$ for RoadTracer and our segmentation approach, and 19% $F_{\rm error}$ for DeepRoadMapper (as it does not produce results with lower average error). A 5 km by 5 km region is used for testing in each city; we only show a 2 km by 5 km region so that the graphs can more easily be compared with each other on a single page.

${\it Amsterdam \ DeepRoadMapper}$



Amsterdam Segmentation (Ours)



Amsterdam RoadTracer







Boston RoadTracer



$Chicago \ DeepRoadMapper$

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Chicago Segmentation (Ours)

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Chicago RoadTracer

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Denver DeepRoadMapper



Denver Segmentation (Ours)



Denver RoadTracer



Kansas City DeepRoadMapper



Kansas City Segmentation (Ours)



Kansas City RoadTracer



${\rm Los \ Angeles \ DeepRoadMapper}$



Los Angeles Segmentation (Ours)



Los Angeles RoadTracer



Montreal DeepRoadMapper



Montreal Segmentation (Ours)



Montreal RoadTracer



New York City DeepRoadMapper



New York City Segmentation (Ours)



New York City RoadTracer



Paris DeepRoadMapper



Paris Segmentation (Ours)



Paris RoadTracer



Pittsburgh DeepRoadMapper



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Salt Lake City DeepRoadMapper

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Salt Lake City Segmentation (Ours)

Salt Lake City RoadTracer

San Diego DeepRoadMapper



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Tokyo DeepRoadMapper



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Toronto DeepRoadMapper



Toronto Segmentation (Ours)



Toronto RoadTracer



$Vancouver \ DeepRoadMapper$



Vancouver Segmentation (Ours)



Vancouver RoadTracer

