Solving Reverse k-Nearest Queries on Road Networks with the GPU

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We present a GPU-based approach for computing discretized distance functions on road networks. As applications, we provide algorithms for computing discrete Order-k Nearest Neighbor diagrams and for approximately solving (Bichromatic) Reverse k-Nearest Neighbor queries on road networks. Finally, we present experimental results obtained with the implementation of our algorithms that demonstrate the effectiveness and efficiency of our approach.

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