

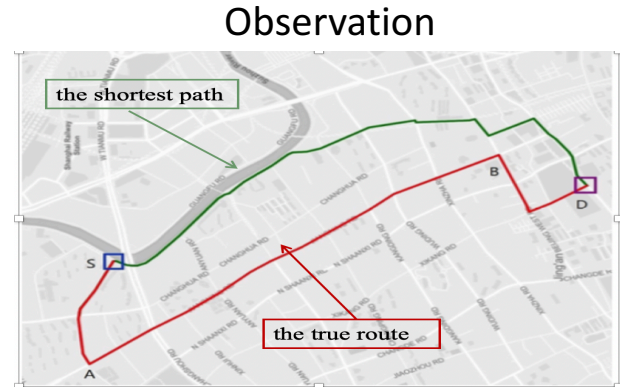


Demo Abstract: Frequent Pattern-based Trajectory Completion

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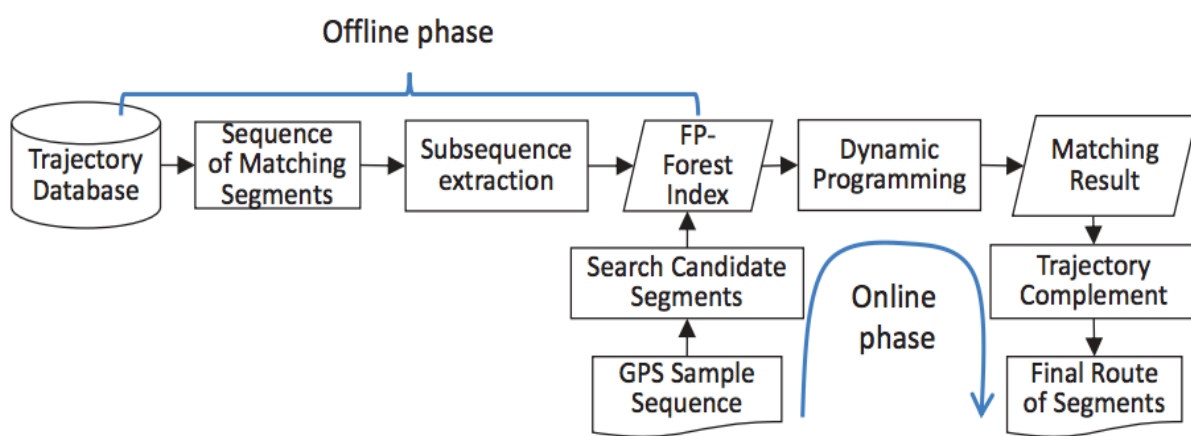
1.Introduction

- It is common that the trajectory data contains sparse GPS points generated by GPS sensors ,so it is quite necessary to complete full trajectories from the sparse GPS points.
- State-of-the-art essentially completes the entire route by using a single metric e.g. either shortest distance or fastest driving time.
- Unfortunately, using a single metric may not work well in real life due to the diversity of mobility patterns.



2.System Overview of FP Completion

- In our demo, we give a frequent pattern (FP)-based trajectory completion approach, and demonstrate a trajectory completion system prototype to validate the advantages of the FP approach over four previous works in terms of higher accuracy and faster running time.

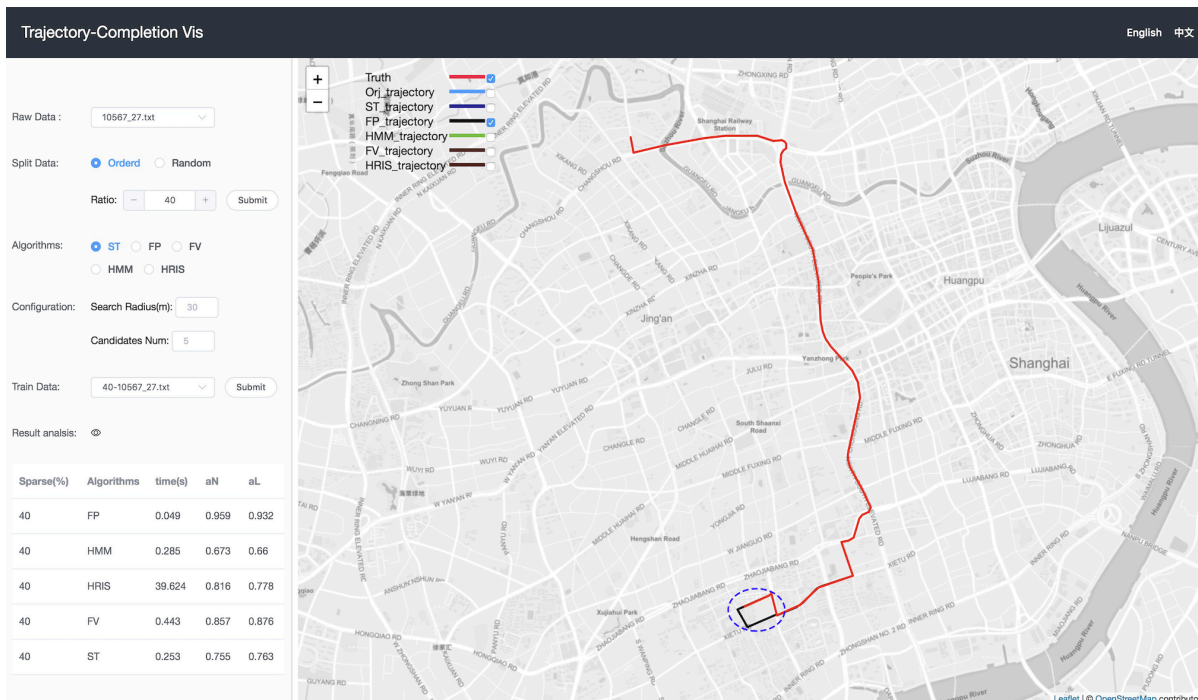


System Overview

- In the offline phase, we preprocess a third-party history trajectory database to maintain an FP-forest structure
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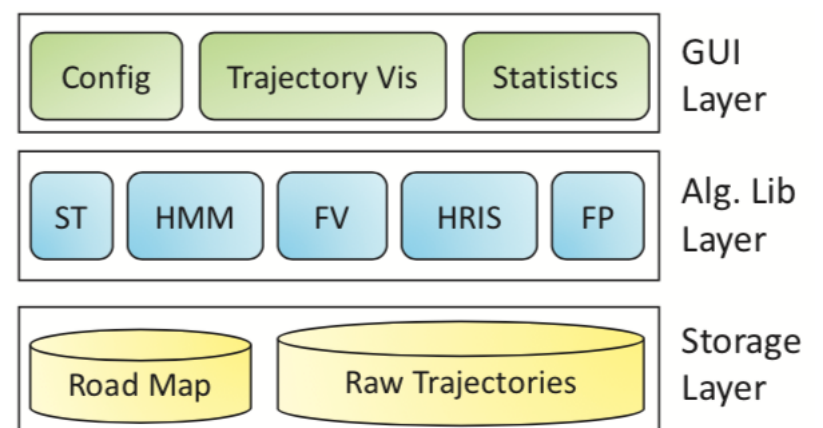
4.Demo Application

- we display the running result of selected algorithms. The prototype can 1) list the running result of each algorithm, and 2) visualize the completed trajectories on a real road network map



3. Prototype

- Our prototype in the below Figure contains the following three layers.. as follow: Data Store Layer, Algorithm Library Layer, Visualization Layer.



Prototype Design

5.Conclusion

- In this demo, we introduce a frequent pattern-based trajectory completion approach, describe a prototype to evaluate trajectory completion algorithms, and demonstrate the advantages of the proposed approach over four previous works in terms of both accuracy and running time.

6.Reference

- [1] Jian Hu and Yang-Li Xiang. 2008. A Fast Parallel Association Rules Mining Algorithm Based on FP-Forest. In ISNN. 40–49.
- [2] Yukun Huang, Weixiong Rao, Zhiqiang Zhang, Peng Zhao, Mingxuan Yuan, and Jia Zeng. 2018. Frequent Pattern-Based MapMatching on Low Sampling Rate Trajectories. In MDM. 266–273.
- [3] Yin Lou, Chengyang Zhang, Yu Zheng, Xing Xie, Wei Wang, and Yan Huang. 2009. Map-matching for low-sampling-rate GPS trajectories. In SIGSPATIAL. 352–361.