TravleRhythm GNN Related Works

Yejin Kim

Related Works

Travel Location Recommendation

2021 DynaPosGNN: Dynamic-Positional GNN for Next POI Recommendation

- Next POI Recommendation이라는 분야가 따로 있나봄. Related Work 확인 필요
- Gowalla dataset 사용
- 기존 Next POI Recommendation에서는 사용자가 방문한 장소와 시간을 각각 spatial characteristic, temporal characteristic으로 나눠서 RNN으로 돌렸는데, 이 경우에는 user의 현재 위치 기준에서 다음 위치만을 예상할 뿐 도착까지 걸리는 시간이라든가 예측 시간을 고려하지 않음
- 이 연구에서는 사용자의 다음 장소를 도착 시간과 spatial dynamic graphs (User-POI graph, POI-POI graph)를 이용해 추천하는 알고리즘을 만듦
- 공개된 오픈소스 없음

2021 DynaPosGNN: Dynamic-Positional GNN for Next POI Recommendation

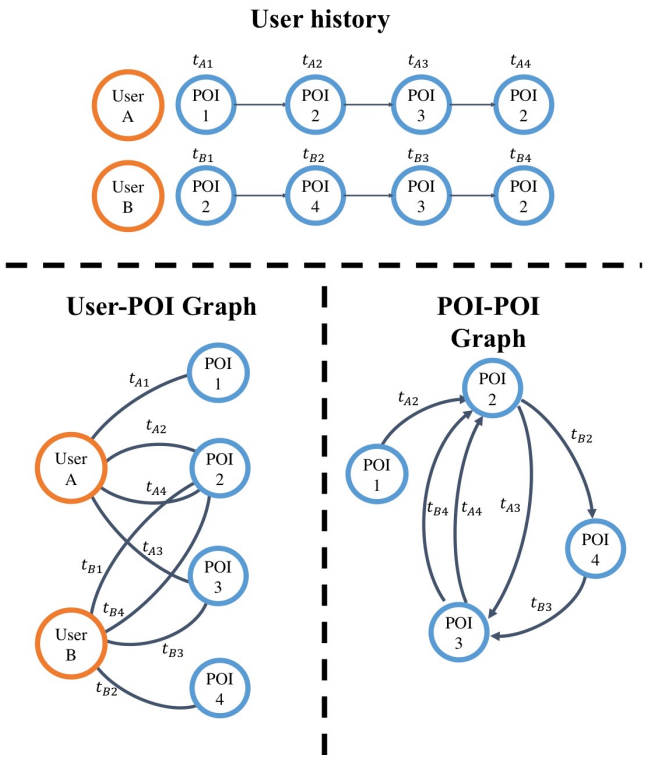

Fig. 2. An example of User-POI graph and POI-POI graph generation.

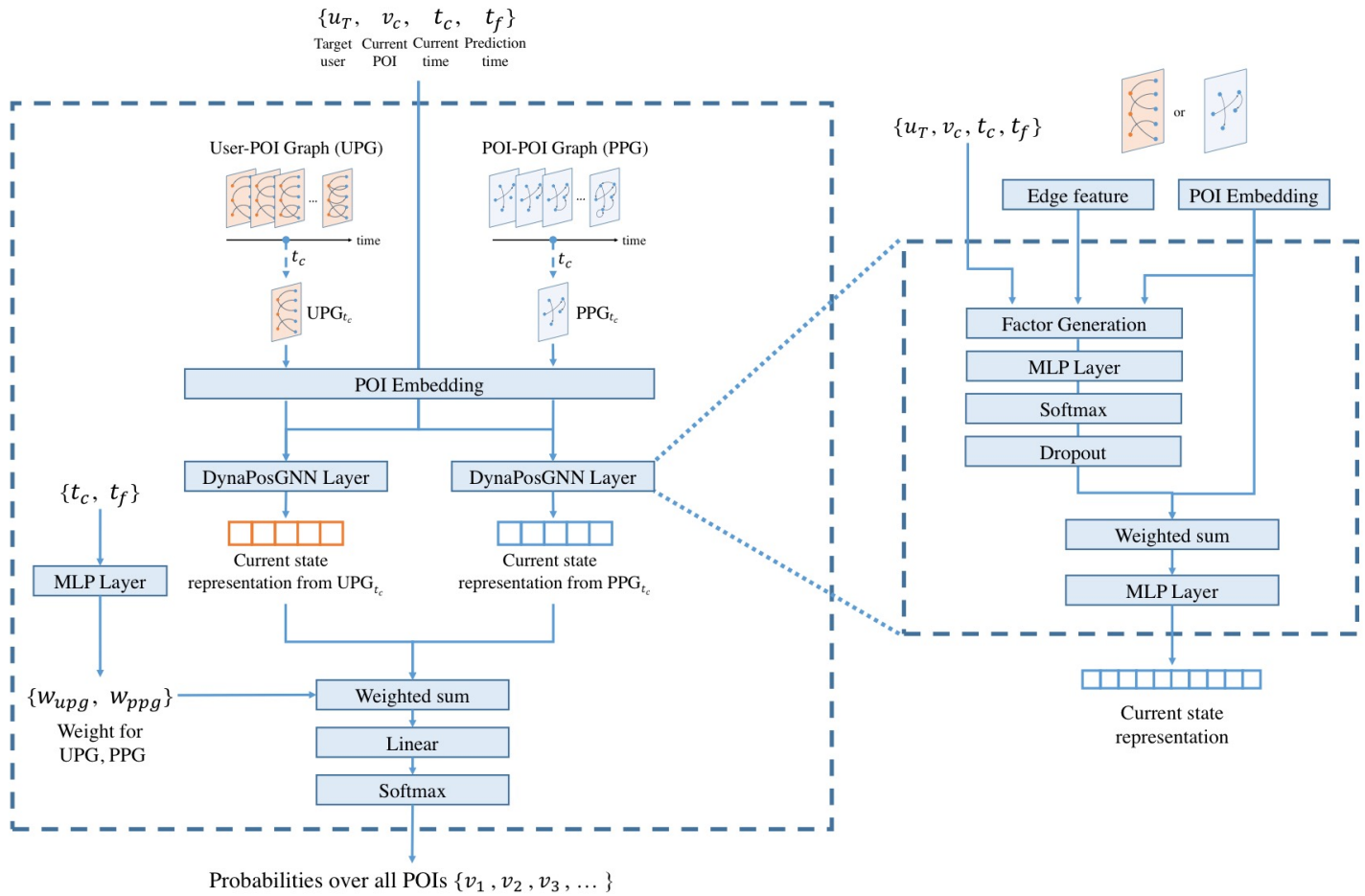

Fig. 3. The architecture of DynaPosGNN model.

Related Works

Travel Region Recommendation

2022 Multi-view Graph Attention Network for Travel Recommendation

- 이 논문도 사용자가 갈만한 장소를 추천하기보다, 다음에 방문할 여행 지역을 추천함. 다만, 가격과 같은 요소를 그래프 네트워크에 추가한다는 점이 기존 모델과 다름
- Attention Mechanism을 사용하는 듯 함
- 사용하는 데이터셋은 Tuniu Dataset으로, user IP address와 searched keywords를 제공함. 노드 구성으로는 user (U), travel product (V), departure (S), destination (D), price (P)이고, 여섯 개의 에지는 user-product (click), User-Departure (near), User-Destination (search for), Product-Departure (belong to), Product-Destination (belong to), Product-Price (belong to)로 되어있음.

2022 Multi-view Graph Attention Network for Travel Recommendation

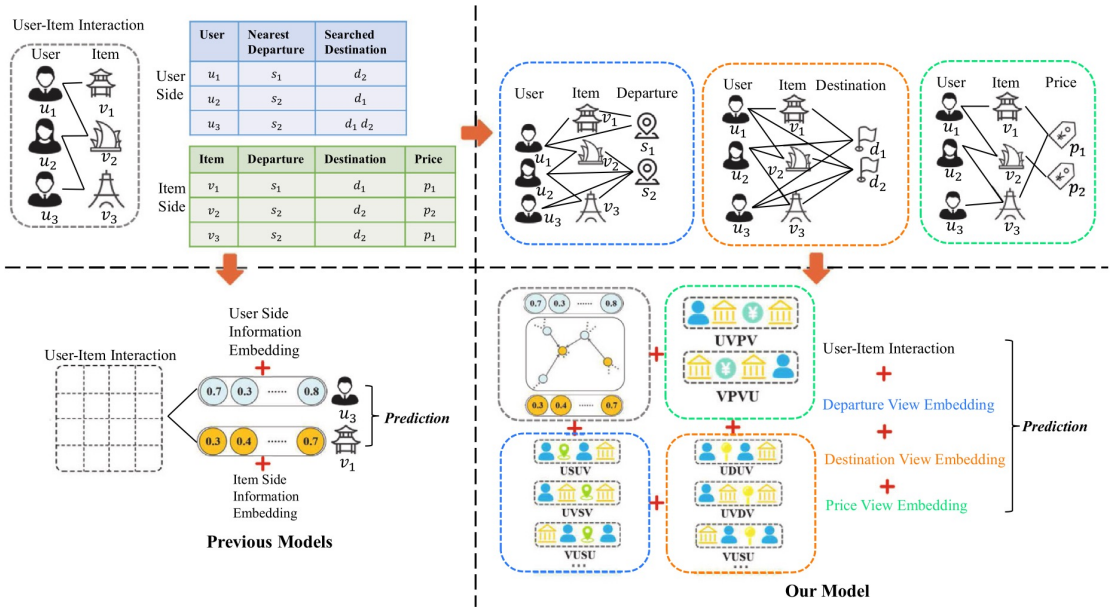

Fig. 2. The difference between our proposed MV-GAN model and the previous travel product recommendation models.

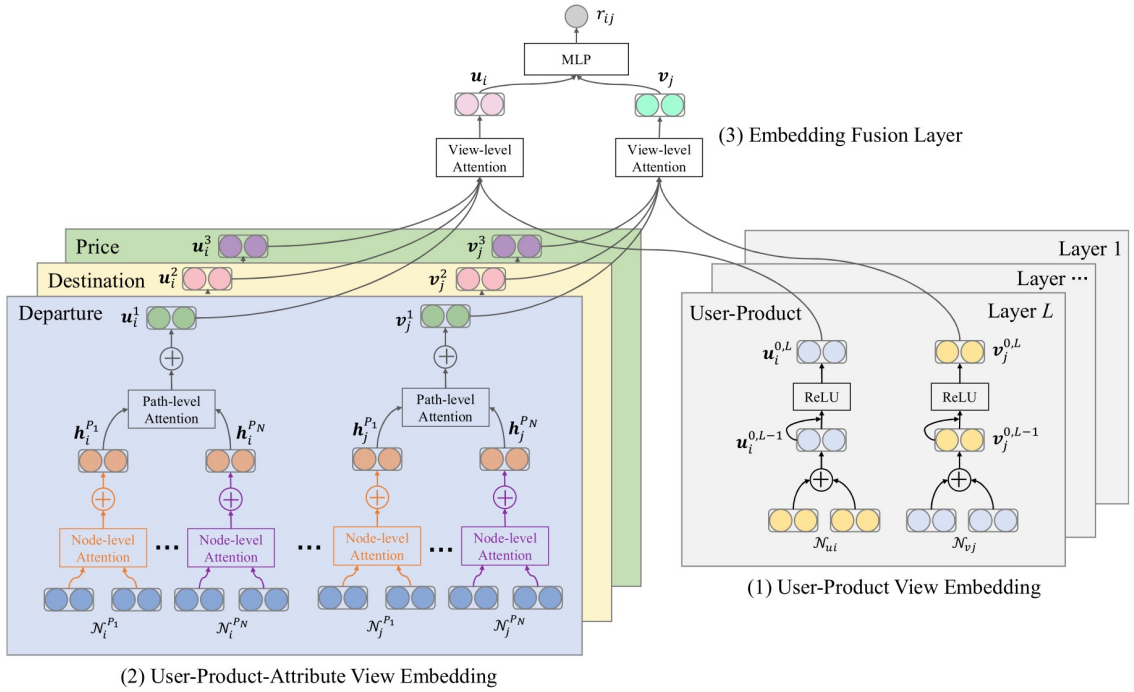

Fig. 5. The overall framework of the proposed model in the travel recommendation.

2021 A multi-task learning approach for improving travel recommendation with keywords generation

- 사용자의 클릭 시퀀스와 클릭할 당시 타이틀의 키워드를 따와서 여행지를 추천한다는데, '여행지'가 아니라 여행 지역임

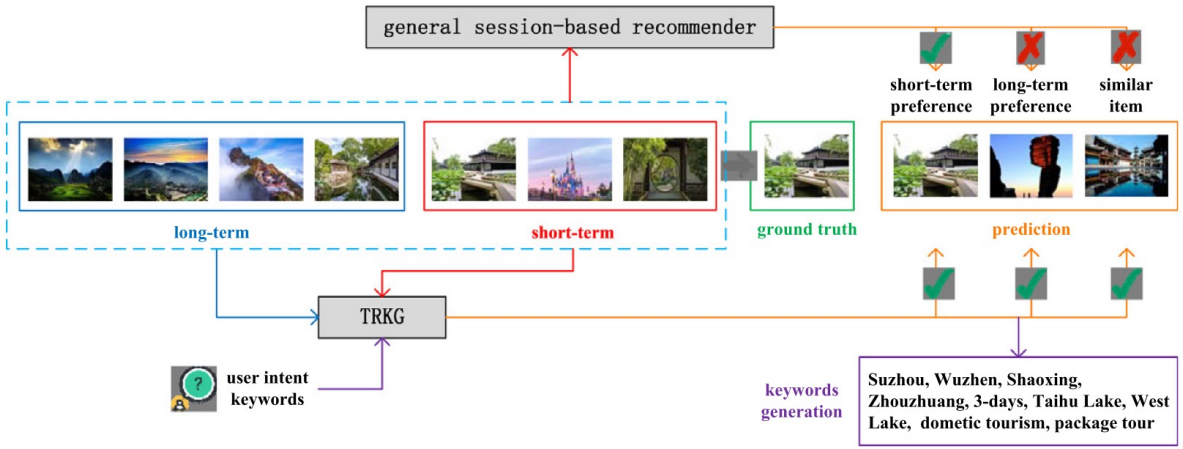

Fig. 1. The difference between our proposed TRKG model and the general session-based recommendation approach.

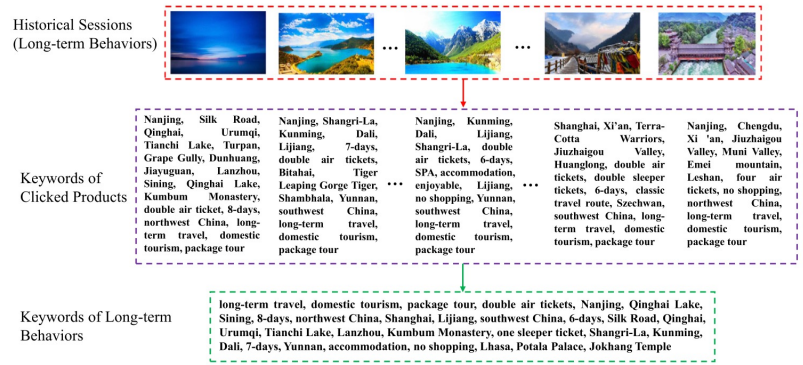

Fig. 3. Extracting keywords from users' long-term behaviors.

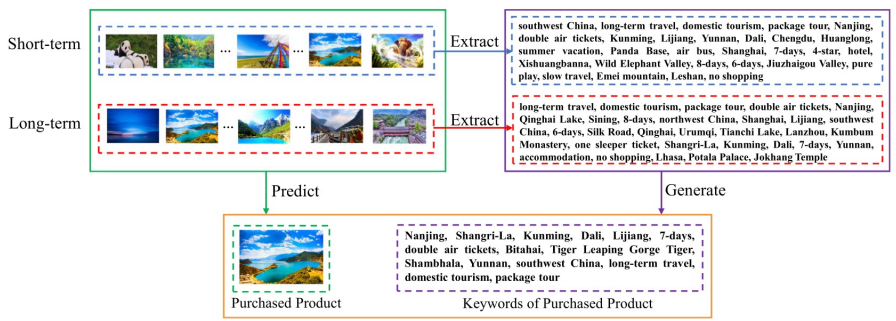

Fig. 4. An example of travel recommendation with keywords generation.

2021 (Short Paper) Out-of-Town Recommendation with Travel Intention Modeling

- 추천 모델 자체가 타지역으로 가는 사람들을 대상으로 함 (Out-of-town POI recommendation)
- 사용자의 home-town preferences와 travel intention을 모두 모델에서 고려한다고 함
- 사용자의 intention을 Neural Topic Model (NTM)을 이용해 모델 안에 반영한다고 함. 여기서 사용하는 topic은 textual review인 것으로 보임
- [xhran2020 / TarinOR_AAAI21]

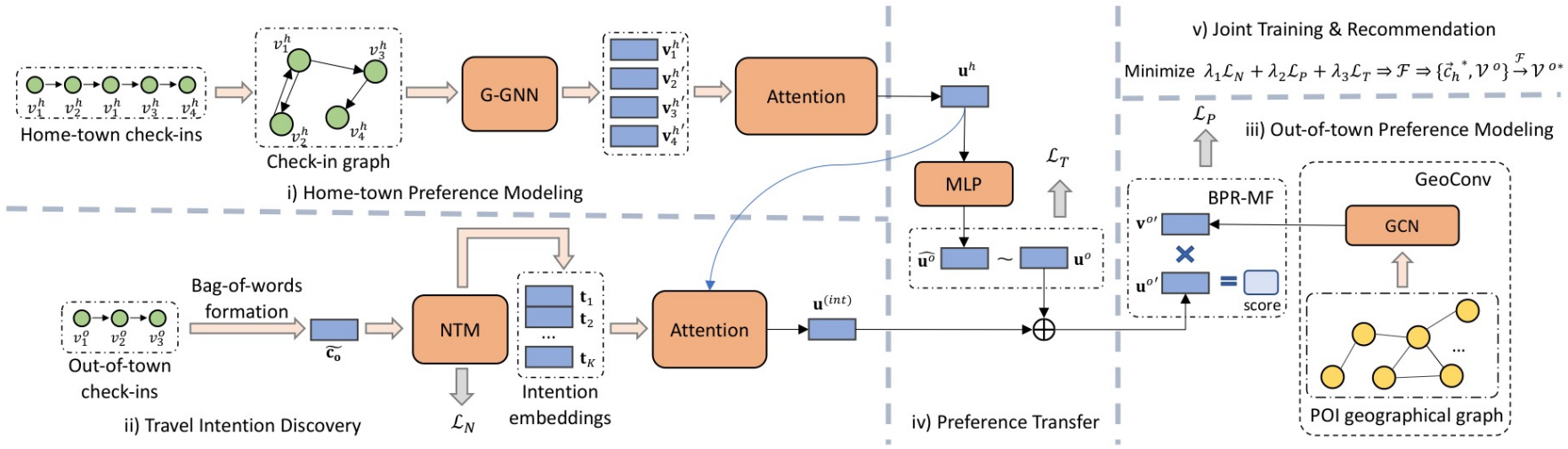

Figure 1: The overview of TRAINOR framework.

Works Not Related

2019 Empowering A* Search Algorithms with Neural Networks for Personalized Route Recommendation

- 여기에서 말하는 'personalized route recommendation'은 다음 목적지까지의 경로 추천이지, 다음 목적지를 추천하는 것이 아님

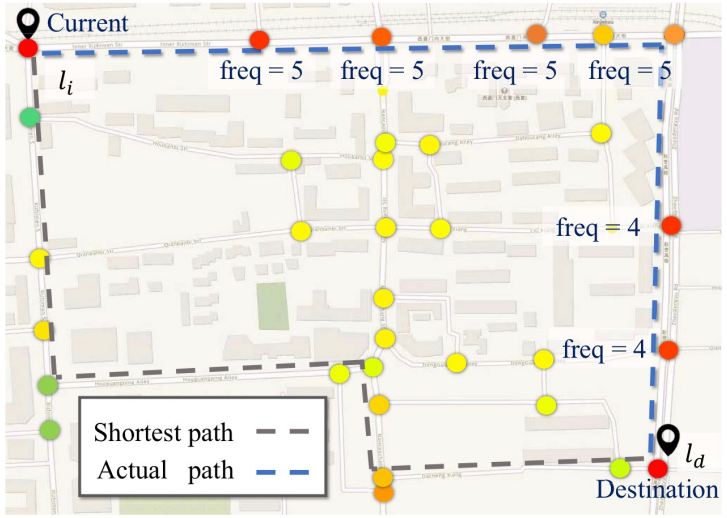

Figure 3: Visualization of the learned association scores using improved graph attention networks. The colored circles denote locations in the road network. A darker color indicates a larger importance degree *w.r.t.* current location l_i and destination l_d. "*freq*" denotes the visit frequency by the user in historical trajectories.

2022 Unified Route Recommendation Learning for Multi-Modal Transportation Recommendation with Spatiotemporal Pre-Training

- 교통 수단 추천을 위한 연구로, 우리와는 관련 없음

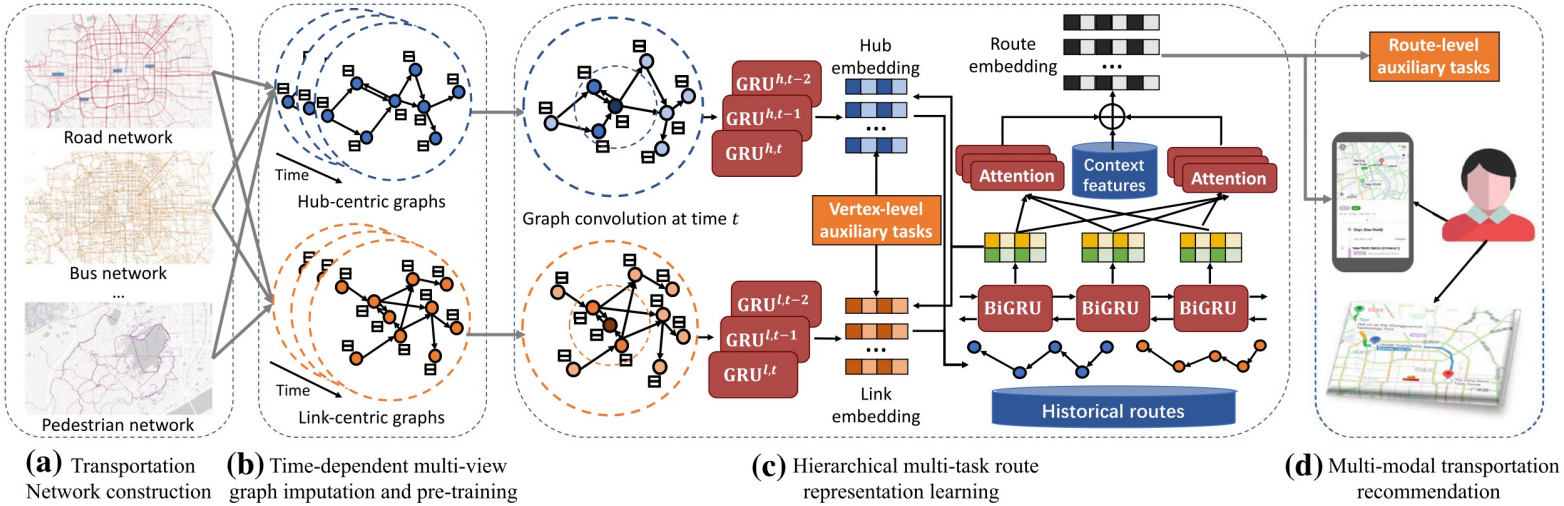

Fig. 1 An overview of unified route representation learning for multi-modal transportation recommendation

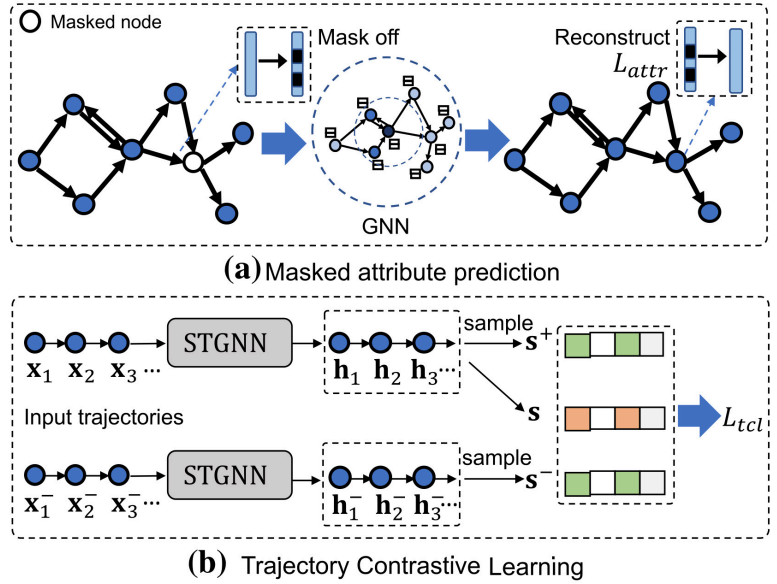

Fig. 4 Illustration of spatiotemporal pre-training tasks, including (1) the attribute prediction, and (2) the trajectory contrastive learning

참고 링크

hubojing/POI-Recommendation

POI-Recommendation

关于兴趣点推荐的一切。 论文大多来自顶刊顶会或其它主流期刊。

欢迎提Issue完善本项目。

论文

KDD 2022

- Graph-Flashback Network for Next Location Recommendation

SIGIR 2022

- Hierarchical Multi-Task Graph Recurrent Network for Next POI Recommendation PDF CODE
- Learning Graph-based Disentangled Representations for Next POI Recommendation PDF
- GETNext: Trajectory Flow Map Enhanced Transformer for Next POI Recommendation
- Next Point-of-Interest Recommendation with Auto-Correlation Enhanced Multi-Modal Transformer Network
- Empowering Next POI Recommendation with Multi-Relational Modeling PDF

WSDM 2022

- Translating Human Mobility Forecasting through Natural Language Generation PDF

AAAI 2022

- [workshop] TADSAM:A Time-Aware Dynamic Self-Attention Model for Next Point-of-Interest Recommendation
  PDF

Gowalla dataset

- Social game으로 특정 장소에서 체크인하고 근처에 있는 사람들과 연락하고 게임하는 앱. 게임을 통해 얻은 유저 데이터셋을 스탠포드 측에 제공해서 지금은 일반 유저도 데이터셋을 사용할 수 있음.
- 유저가 어디에서 언제 체크인했는지 알 수 있고, 유저의 친구 활동도 같이 알 수 있음
- 논문: 2011 Friendship and Mobility: User Movement In Location-Based Social Networks

읽어야할 논문 리스트

- 2020 GLR: A Graph-Based Latent Representation Model for Successive POI Recommendation
- 2020 STP-UDGAT: Spatial-Temporal-Preferance User Dimensioional Graph Attention Network for Next POI Recommendation
- 2022 A Survey on Deep Learning Based Point-of-Interest (POI) Recommendations
- 2021 리뷰 텍스트를 활용한 토픽별 키워드 기반 시맨틱 POI 검색
- 2022 Toward Point-of-Interest Recommendation Systems: A Critical Review on Deep-Learning Approaches
- 2021 POI Recommendation Method Using Deep Learning in Location-Based Social Networks

- 2021 Sequantial-Knowledge-Aware Next POI Recommendation: A Meta-Learning Approach
- 2021 Attention Memory Network with Correlation-based Embedding for Time-Aware POI Recommendation
- 2022 Real-Time POI Recommendation via Modeling Long-and Short-Term User preferences
- 2022 ADQ-GNN: Next POI Recommendation by Fusing GNN and Area Division with Quadtree
- 2021 Origin-Aware Next Destination Recommendation with Personalized Preference Attention
- 2022 Graph-Flashback Network for Next Location Recommendation

- ~~2022 Incremental Tree-Based Successive POI Recommendation in Location-Based Social Networks~~
- 2022 Empowering Next POI Recommendations with Multi-Relational Modeling
- ~~2022 STaTRL: Spatial-Temporal and Text Representation Learning for POI Recommendation~~
- 2021 Improving Location Recommendation with Urban Knowledge Graph
- 2022 Learning Graph-based Disentangled Representations for Next POI Recommendation
- 2022 An Attention-Based Spatiotemporal GGNN for Next POI Recommendation

- 2022 A Systematic Analysis on the Impact of Contextual Information on Point-of-Interest Recommendation