

DREAM-KG: Develop Dynamic, Responsive, Adaptive, and Multifaceted Knowledge Graphs to Address Homelessness With Explainable AI

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Use case description and societal challenge being addressed

Our DREAM-KG can be used to provide precision social services and resources available for people experiencing homelessness (PEH), including emergency shelters, transitional housing, permanent supportive housing, food assistance programs, healthcare services, employment and job training, legal assistance, and substance abuse and mental health services.

The primary users of the DREAM-KG will be PEH, front-line case workers, law enforcement agents, non-profit organizations, and federal agencies. To sum up, use cases include (i) Coordinated Entry for Emergency Shelters, (ii) Serving Returning Citizens for U.S. Department of Justice (USDOJ), (iii) Utilizing Dynamic Providers and Mobile Offices/Services, (iv) Leveraging the DREAM-KG for Law Enforcement, and (v) Evidence-based Policymaking and Recommendations. Our DREAM-KG can help PEH and their case managers to accurately identify resources that are tailored to each user's unique needs. This will save users time and frustration by traveling to locations that are not currently in service, and lead PEH and their allies to put pressure on localities to find the money to transform vacant properties to affordable housing units, reducing the need for homeless services altogether and improving the quality of life for many.

Knowledge graph source datasets

The data sets include (i) social care data from the Findhelp.org, (ii) homeless resources from Shelter App, (iii) crime incidents from the City of Philadelphia, (iv) USDOJ, (v) Google Maps, and (vi) Apple Maps

(i) and (ii): Providing basic descriptions of homeless service providers, e.g., main services, eligibility, languages, cost, website, coverage area, phone number, opening hours, etc.

(iii): Providing daily crime incidents and their types, geolocations, dispatch time, etc.

(iv): Providing reentry individuals data

(v) and (vi): Providing basic description of the target homeless service providers, geolocation, rating, comments from reviewers (only for Google Maps), etc.

User queries / competency queries for the use case

- Target homeless service providers which provide multiple services
- Hours available for the target homeless service providers
- Multiple languages instead of just English
- Hours available in the weekend
- Cost free or not