

Deep Auto-Encoding for Context-Aware Inference of Preferred Items' Categories



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Goals:

1) Design novel deep learning approach for modeling users' contexts from the data collected from mobile device sensors

2) Predict contextual user preferences employing the user's current unsupervised context and models learned from past users' interactions with a recommender system.

Experiment: 90 participants used POI (Point Of Interest) Recommendation System for **4** weeks and provided feedbacks ("like", "dislike", "check-in"). For each provided feedback, the application recorded **247** mobile sensors features (e.g.: GPS, microphone, running applications, light, WiFi)

Contributions:

- •Inferring POI categories in **different granularity levels** using auto-encoding
- •Improving state-of-the-art classification methods by utilizing hidden context patterns
- •Utilize the deep architecture in order to handle the cold start problem and detect context similarity

