

## 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

