# UserTweetGraph (UTG)

## What is it

User Tweet Graph (UTG) is a Finalge thrift service built on the GraphJet framework. In maintains a graph of user-tweet engagements and serves user recommendations based on traversals of this graph.

## How is it used on Twitter

UTG recommends tweets based on collaborative filtering & random walks. UTG takes a set of seed users or seed tweets as input, and performs

1-hop, 2-hop, or even 3+hop traversals on the engagement graph.

UTG's user-tweet engagement edges are bi-directional, and this enables it to perform flexible multi-hop traversals. The flipside to this is

UTG is more memory demanding compared to other GraphJet services like UTEG, whose engagement edges are single directional.

UTG is a stateful service and relies on a Kafka stream to ingest & persist states. The Kafka stream is processed and generated by Recos-Injector.

It maintains an in-memory user engagements over the past 24-48 hours. Older events are dropped and GC'ed.

For full details on storage & processing, please check out our open-sourced project GraphJet, a general-purpose high performance in-memory storage engine.

- https://github.com/twitter/GraphJet

- http://www.vldb.org/pvldb/vol9/p1281-sharma.pdf