



Improving Recommendation Using Multiple Behaviors

Chen Gao
Tsinghua University



What and why

- E-commerce: more diverse and complex
 - Plenty of user logs
 - Multiple behaviors: view, click, collect, search, buy, etc.
- Existing work
 - Mainly focusing on purchase behavior

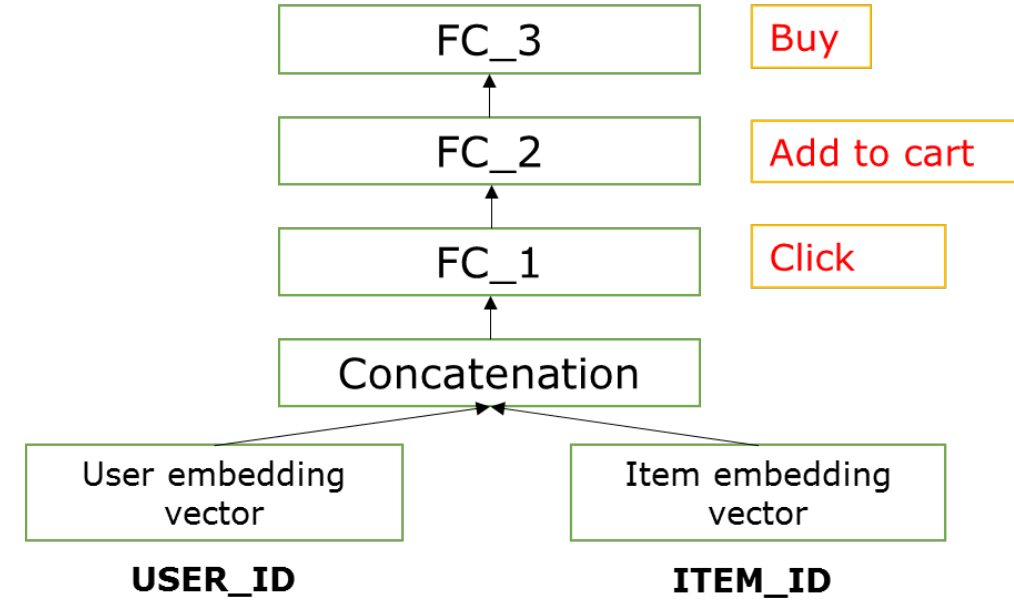


Dataset Description

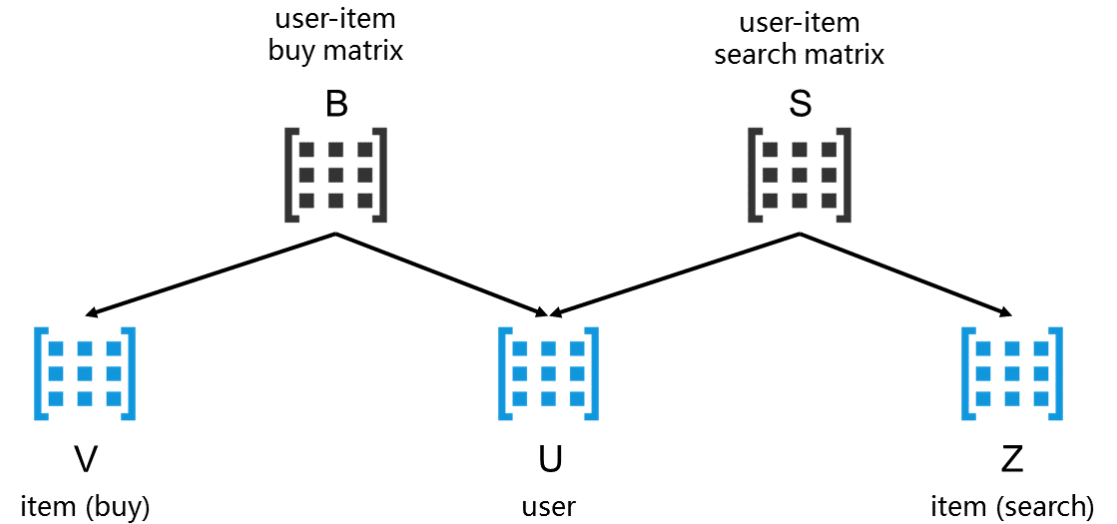
- Various kinds of logs of millions of users
 - Action log (Multiple behaviors)
 - Trade log
 - Recommendation log
- Detailed information of users and items

- 1. Multi-task-learning neural network
 - Cascaded neural network
 - Click, add to cart and buy

- 2. Multiple behaviors generate multi-implicit feedback
 - View without click
 - Click without buy



- 3. Exploiting search behaviors
 - Co-matrix factorization
 - Two matrices : search and buy
 - Common user vector
 - From search sequence to purchase sequence
 - Applying seq2seq in NMT
 - Using attention





THANK YOU