Improving Recommendation Using Multiple Behaviors

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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
• Various kinds of logs of millions of users
  • Action log (Multiple behaviors)
  • Trade log
  • Recommendation log

• Detailed information of users and items
Three aspects

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

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

- 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