Temporal Collaborative Filtering
With Adaptive Neighbourhoods

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Introduction

Recommender Systems are cyclical: they are regularly updated as users rate content.

Users Rate

Recommend

Train Algorithm

Predict Ratings

Research

Problem: How to extend CF evaluation to include the effects of temporal updates?

Predict the future with the past ratings that have been input to date.

Proposal

We proposed and evaluated a two switching hybrid CF algorithms with a temporally-based decision criterion:

1. Select the model to make predictions now based on the historical performance of each candidate model.

2. Modify per-user parameters within a single model based on those that would have been the most accurate at previous updates.

Future Work

How can temporal CF be used to improve recommendation diversity? How can it protect systems from sybil attacks?