Improving sequantial recommendation model with MSE

Noora Pöysti & Väinö-Waltteri Granat

November 18, 2021

Basic idea

We want to improve the calculation of α_j by taking all the users satisfactions in to account while giving more weight to the least satisfied users. We can achieve this with MSE.

Improved α_j

α_j is calculated with MSE (mean squared error) but instead of using a square we take cube root of the square to allow α_j to increase in value when dissatisfaction is high.

$$\alpha_j = \frac{1}{|G|} \sum_{u \in G} \sqrt[3]{(max_{u' \in G} sat(u', Gr_{j-1}) - sat(u, Gr_{j-1}))^2}$$

MSE exaturates the error when distance between values is high, so the algorithm will but more weight for the iterations when lots of disagreement is present.

References