Recommendation Calculation (Bayesian Personalized Ranking)

User Item Rating Matrix

User Latent Factor Matrix

Item Latent Factor Matrix

Matrix Factorization

Item Item Matrix

User Latent Matrix Row

Positive Item Latent Matrix Row

Negative Item Latent Matrix Row

Bayesian Probability

Sigmoid Function

Relationship between Sigmoid Function and Bayesian Probability

Normal Distribution

Relationship between Normal Distribution and Bayesian Probability

BPR Optimized Function

Partial Derivative on BPR Optimized Function

Interactive Parameter Update