

LIST OF NOTATIONS

Symbols	Definition
$\vec{v}$	A vector, typically representing a document or query embedding.
d	The dimensionality of a vector embedding (in this study, $d = 384$).
$\ \vec{v}\ $	The magnitude (or L2 norm) of a vector $\vec{v}$.
α, β	Weighting factors used in scoring or combining results.
λ	The rate parameter, used in calculating flush probability.
$\mapsto$	Mapping operator.
(x_i, y_i)	Data point.
$ A $	Cardinality of a set A.
$ p - q $	Absolute value of the difference between p and q.
$\mathbb{R}$	The set of real numbers.
$G = (V, E)$	A graph defined by a set of vertices (nodes) V and a set of edges (relationships) E .
$ V , E $	The cardinality (number of elements) of the sets V and E, respectively.
precision@K	(Precision at K) The proportion of relevant items found in the top-K retrieved results.
MRR	(Mean Reciprocal Rank) A statistic for evaluating a retrieval system based on the rank of the first correct answer.
r	Pearson correlation coefficient, measuring the linear relationship between two variables.
p	The p-value, indicating the statistical significance of an observed result.
$t(df)$	The t-statistic with a specific number of degrees of freedom (df).
$F(df_1, df_2)$	The F-statistic from an ANOVA test, with numerator and denominator degrees of freedom.
Cohen's d	A measure of effect size, indicating the magnitude of a difference between two groups.
κ	(Fleiss' Kappa) A measure of inter-rater reliability for categorical ratings.
α	(Cronbach's Alpha) A measure of internal consistency for a set of scale or test items.
ICC	(Intraclass Correlation Coefficient) A descriptive statistic used to measure the reliability of ratings.