

# Performance Evaluation in Multimedia Retrieval

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Performance evaluation in multimedia retrieval, as in the information retrieval domain at large, relies heavily on retrieval experiments, employing a broad range of techniques and metrics. These can involve human-in-the-loop and machine-only settings for the retrieval process itself and the subsequent verification of results. Such experiments can be elaborate and use-case-specific, which can make them difficult to compare or replicate. In this paper, we present a formal model to express all relevant aspects of such retrieval experiments, as well as a flexible open-source evaluation infrastructure that implements the model. These contributions intend to make a step towards lowering the hurdles for conducting retrieval experiments and improving their reproducibility.

**CCS Concepts:** • Information systems → Users and interactive retrieval; Evaluation of retrieval results.

**Additional Key Words and Phrases:** Interactive Multimedia Retrieval, Retrieval Evaluation, Interactive Evaluation, Evaluation System

## ACM Reference Format:

Loris Sauter, Ralph Gasser, Heiko Schuldt, Abraham Bernstein, and Luca Rossetto. 2024. Performance Evaluation in Multimedia Retrieval. *ACM Trans. Multimedia Comput. Commun. Appl.* 1, 1, Article 1 (January 2024), 23 pages. <https://doi.org/10.1145/3678881>

## 1 INTRODUCTION

Engaging in experimentation stands as the paramount method for substantiating or refuting hypotheses, thereby pushing the boundaries of human knowledge. Access to precise tools, enabling the formulation, documentation, and reproducibility of experiments, therefore stands as an indispensable element of rigorous scientific inquiry.

While this principle holds true across disciplines, it poses a particularly distinctive challenge in multimedia retrieval and the evaluation of related systems. The particular challenge in this domain manifests in three key aspects: Firstly, multimedia retrieval comes with a diverse set of problems, spanning the straightforward task of locating one or several specific items in a dataset to acquiring aggregations or derivations thereof.

Secondly, multimedia retrieval evaluations can involve both human-in-the-loop (interactive) and automatic, machine-only (non-interactive) settings both for the retrieval process itself [32] and the

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 1551-6857/2024/1-ART1  
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# Analysis Of Retrieval Performance For Selected File

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