

Graph-RAT: A Toolkit for Conducting MIR Research

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The complexity of MIR systems has increased rapidly in recent years, drawing upon different sources of information: content analysis, web-mining, social tagging, etc. Unfortunately, the tools to scientifically evaluate such integrated systems are not readily available; nor are the base algorithms available. This demo introduces Graph-RAT an open source toolkit that provides a framework for development and evaluation of integrated MIR systems. The toolkit is available from <http://graph-rat.sourceforge.net>.

This toolkit helps alleviate the difficulties of combining content-based analysis, sociological analysis, and other forms of social information by providing a suite of algorithms for each of the different types of analysis and tools to integrate them. This provides a significant boost to researchers, especially those new to the field.

Graph-RAT is written in Java and utilizes a blackboard structure for analysis—the data is kept separate from the algorithms that act upon it—providing a unique, concise language for implementing MIR algorithms that utilizes a number of existing systems such as jAudio, Weka, and Prefuse. A scheduler loads the different algorithms and executes them against portions of the data producing graphs, actors, links, or properties. Most existing MIR algorithms are describable using the graph algorithms already present in the toolkit.