

# Using T-Ret System to Improve Incident Report Retrieval

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**Abstract.** This paper describes novel research involving the development of Textual CBR techniques and applying them to the problem of Incident Report Retrieval. Incident Report Retrieval is a relatively new research area in the domain of Accident Reporting and Analysis. We describe T-Ret, an Incident Report Retrieval system that incorporates textual CBR techniques and outline preliminary evaluation results.

## 1 Introduction

In this paper we describe the incorporation of Textual CBR techniques into the design of an Incident Report Retrieval system called T-Ret. Textual CBR involves the combining of text similarity metrics with CBR metrics. The Textual CBR approach we use is based on research carried out by Wilson [10]. The paper is structured as follows: Section 2 describes Textual CBR; Section 3 introduces the domain of Incident Reporting in more detail; Section 4 outlines the T-Ret system; Section 5 outlines our preliminary results; Section 6 describes future work and presents our conclusions.

## 2 Textual CBR

Much of current textual CBR (TCBR) research focuses on transforming or augmenting knowledge-poor textual documents such as legal decisions (e.g., [1, 2, 4]) or hotline support documentation (e.g., [3]), in order to generate hybrid structured representations that can be used by traditional knowledge-based CBR methods. Such support for textual CBR is especially important when the raw case information is composed entirely of free-form text.

We are investigating how techniques from information retrieval, which have been widely used to support document-as-case TCBR, can be applied in situations where textual information represents only a small, but useful part of the overall reasoning context. This has led us to view textual CBR along a continuum from “weakly-textual”, where textual information offers limited reasoning support but does not require sophisticated processing, to “strongly-textual”, where textual information is the focus of reasoning but requires much more specialized