

## Report on Information Retrieval System Analysis for ALA Joblist

This report presents an analysis of the information retrieval (IR) system employed by the ALA Joblist website, focusing on the search for "public library" job postings. The analysis includes a review of search results, ranking criteria, recall and precision calculations, content examination, and proposed system improvements.

### Section 1: Search Results Analysis

#### 1.1 Number of Public Library Jobs

In the search for "public library" without quotation marks, 143 results were returned. This search likely includes job postings containing the words "public" and "library" separately. The use of quotation marks in the search for "public library" narrowed it down to 73 results, indicating exact matches for the phrase. A more specific search by "public library" organization type yielded 66 results. The differences in results are likely due to the search area and the level of specificity in each query. The more specific a search is, the more relevant the results, so the refinements offer a better chance at fulfilling the searcher's needs.

#### 1.2 Ranking Criteria of the IR System

The analysis did not reveal explicit ranking criteria for the IR system. The base searches lacked a discernible order, and the job titles, posting dates, and locations appeared in what seemed to be a random order. However, sorting options by title, location, company, and posting date are available. In contrast, the "public library organization type" search featured a "preferred" tag on the top results, implying a potential focus on relevance.

#### 1.3 Recall and Precision

In total, 221 jobs were listed in the database. For "public library" without quotes, both recall and precision were calculated at 0.42 (60/143). For "public library" in quotes, recall was 0.88 (64/73), and precision was 0.82 (60/73). The search for "public library organization type" resulted in recall and precision of 0.97 (64/66) and 0.94 (62/66). Increased specificity and the use of in-database filters contributed to higher relevance and precision, with job postings without dedicated locations or unrelated to library roles excluded (based on personal relevance).

### Section 2: Content Examination and Search Testing

#### 2.1 Chosen Job Posting

The chosen job posting is "Assistant Manager - William H. Jervy, Jr., Venice Public Library."

#### 2.2 Searching Words on the Page

Searching “Assistant Manager” this job is the second result. Searching “William” produced five results and this position was the first result. Searching “Venice” produced three results, and this position was the first. I do think the stop words are indexed because without limiters you will get a slew of results, also I tried to include common stop-words like “and” and it still gave 221 results.

### Section 3: Proposed System Improvements

#### 3.1 System Design and Structured Database Table

If I were the designer of the IR system, I would prioritize extracting and indexing relevant information, updating keywords, and enhancing user engagement. I would propose 21 fields such as Job Title, Company, Location, Job Description, Qualifications, Application Deadline, Salary, Benefits, Application Process, Contact Information, Employment Type, Experience Level, Industry, Job ID/Reference Number, Posting Date, Last Updated, Keywords/Tags, Remote Work, Job Type, and Job Category. These fields are designed to improve retrieval efficiency and facilitate quick analysis of job postings.

In conclusion, the analysis of the ALA Joblist IR system highlighted variations in search results based on specificity, the absence of explicit ranking criteria, and the impact of in-database filters on recall and precision. The system displayed capabilities for searching individual words, and the presence of stop words was indicated. Proposed system improvements focused on database design, better retrieval, and user engagement enhancements.