

# Team OpenWebSearch at CLEF 2024: LongEval and QuantumCLEF

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## Abstract

Quantum annealers can better explore complex optimization landscapes than . the problem formulation that we build is, due to the bootstrapping, highly inconsistent/contradictory. Hence, we explore quantum annealers, comparing them with simulated annealing, finding that xy. QuantumCLEF: Feature Selection for Bootstrapped Feature Importance. LongEval incorporate historical data.

## Keywords

LaTeX class, paper template, paper formatting, CEUR-WS

## 1. Introduction

CEUR-WS's article template provides a consistent  $\LaTeX$  style for use across CEUR-WS publications, and incorporates accessibility and metadata-extraction functionality. This document will explain the major features of the document class.

If you are new to publishing with CEUR-WS, this document is a valuable guide to the process of preparing your work for publication.

## 2. Related Work

Bootstrapping for feature selection was already used before [1], but not in IR/LTR.

Hello world example [1]: Add forgery features that are not relevant to the pool. Try to reduce them. I cann add those features in any distribution, normal distribution, etc. E.g., I should be able to fool every feature selection that does not incorporate the true relevance label.

### 3. Selecting Important Features with QUBO

QUBO = quadratic unconstrained binary optimization minimizes [? ]:

$$\vec{x}^T \cdot Q \cdot \vec{x} = \sum_i^N q_i \cdot x_i + \sum_{i < j}^N q_{i,j} \cdot x_i \cdot x_j$$

## **4. Conclusion**

TBD...

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## References

- [1] J. Yuan, Bootstrapping nonparametric feature selection algorithms for mining small data sets, in: International Joint Conference Neural Networks, IJCNN 1999, Washington, DC, USA, July 10-16, 1999, IEEE, 1999, pp. 2526–2529. URL: <https://doi.org/10.1109/IJCNN.1999.833470>. doi:10.1109/IJCNN.1999.833470.

## A. Online Resources

The sources for the ceur-art style are available via

- GitHub,
- Overleaf template.