Abstract

Determining the bug signatures (context of bug) is difficult, as it involves mining the execution traces of the program. The discriminative graph mining algorithm is used to identify the bug signatures. It requires manual labelling of the input set to estimate the discriminative subgraphs. To reduce the tedious work of manual labelling, this paper presents novel framework to identify bug signatures. The proposed algorithm uses hybrid approach of dual active feature sample selection and LTS (Learn to Search). In the hybrid method, the dual active feature sample selection is used to find the query graph and its corresponding discriminative subgraphs, and LTS method is applied to obtain risk free optimal solution. The performance of the combined approach is measured with the parameters (i) runtime, (ii) recall and (iii) precision. The experiment results shows that this hybrid approach has an improved runtime of 60.10% when only 40% of the input graph set is manually labelled. The recall and precision are also improved by 33.33% when compared with dual active feature sample selection without LTS.
A Novel Approach using Dual Active Feature Sample Selection and LTS (Learn to Search)

References

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Index Terms

Computer Science

Information Sciences
Keywords
Graph Mining  Discriminative subgraph mining  Bug Signatures