# An approach for unlabeled tasks prioritization

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Motivation

Any manager supervising a software developer team is aware of the importance to adequately prioritize tasks. This problem is especially acute in large companies with massive backlogs. Even though some procedures to deal with this problem do exist, up to this date there is no approach that: a) is optimized on order metric; b) uses non-gradient based optimizers; hence c) is capable of guaranteeing good results

Our Solution
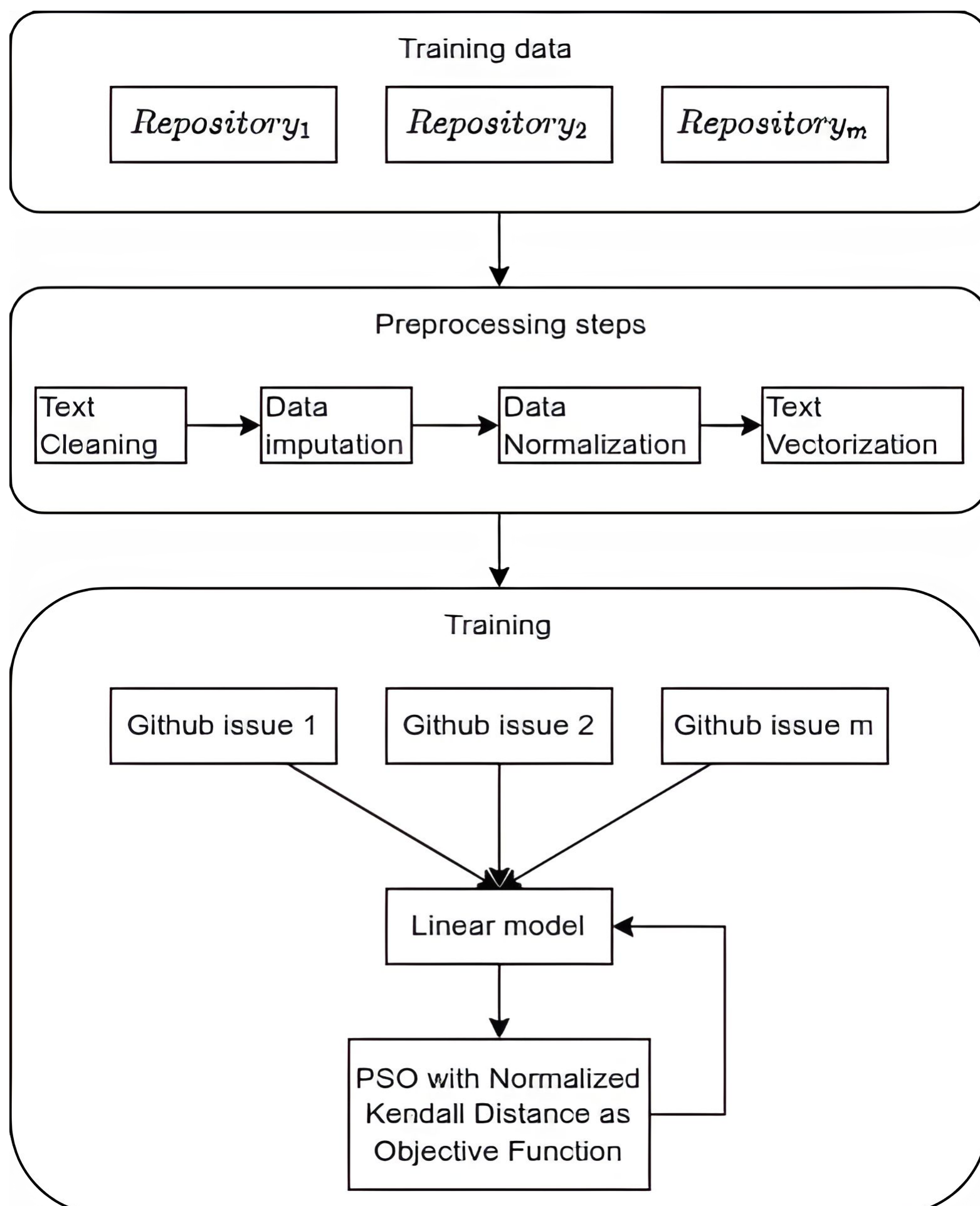
Acknowledgments

Method comparison

Method	Normalized Kendall Distance
Our Approach (two layer Neural Network)	0.19
Our approach (Linear model)	0.21
Issue Prioritizer[1] (with Grid Search parameters)	0.51
Issue Prioritizer (with default parameters)	0.86

Results

Our unique contribution to the field is threefold:

- we elaborate a model of predicting the sequencing of execution of tasks, validated on a an industrial dataset, and correctly predicting the mutual ordering of tasks on more than 80% of the cases on the average, which is much better than existing proposals;
- we present a novel approach to perform estimations in software engineering using an order metrics cost function optimized with non-gradient based approaches;
- we evidence that the adoption of puzzle driven development allow the possibility to achieve quite comfortable predictions on tasks sequencing, an area always permeated by high uncertainty in software engineering

References

1. Dhasade, A.B et al., 2020, "Towards prioritizing github issues", ISEC, 18, 1–5