

Paper Nine Summary

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Reference

Nam et al. [1] listed below.

Important Keywords

Transfer defect learning Extracting common knowledge from one task domain and transferring it to another. The transferred knowledge is then used to train a prediction model.

TCA+ An improvement on Transfer Component Analysis. TCA can map the data of the source and target projects on a latent feature space, but is sensitive to normalization. TCA+ selects a proper normalization to yield better prediction performance.

Data set Characteristic Vector A vector of six elements each relating to the distance between pairs of instances of data. DCVs are used to see how similar two projects are (see below).

Similarity vector Represents the difference between two projects: a source and a target. Examples include "much more", "less", or "same". The values in the DCVs are used to calculate the similarity vectors.

Feature Extraction

Motivational statements Cross-project defect prediction is often necessary for new projects, but doesn't always yield good results. Therefore, the authors hope to employ transfer defect learning to improve the performance of these models.

Data The authors have provided the data used in their experiments at <https://sites.google.com/site/transferdefect/>.

Future work The authors were looking into transferring knowledge across entire domains as an extension of transfer learning. They were also interested in seeing which other prediction and recommendation systems might benefit from transfer learning.

Possible Improvements

Connection to Other Papers

References

- [1] Jaechang Nam, Sinno Jialin Pan, and Sunghun Kim. Transfer defect learning. In *Proceedings of the 2013 International Conference on Software Engineering*, ICSE '13, pages 382–391, Piscataway, NJ, USA, 2013. IEEE Press.