

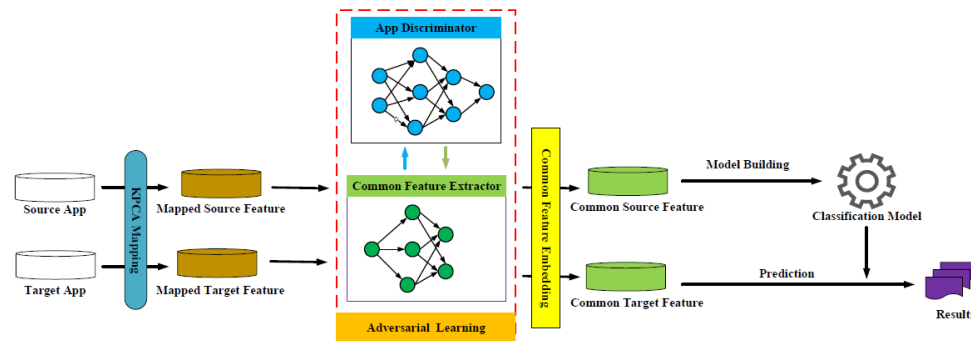
Effort-Aware Cross-project Just-in-Time Defect Prediction Framework for Mobile Apps

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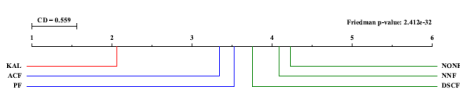
Problems & Ideas

- Problems of cross-project Just-in-Time defect prediction in mobile apps
 - A recent study first introduced JIT defect prediction into mobile apps but with traditional indicators.
 - Poor performance.
- Ideas: Kernel-based Principal Component Analysis with the Adversarial Learning technique (KAL)
 - Using the KPCA technique obtain more representative features.
 - Applying the AL technique to produce the common feature representation for cross-project pairs.

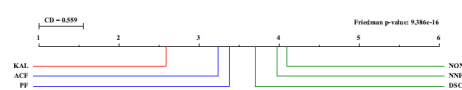


Main Contributions

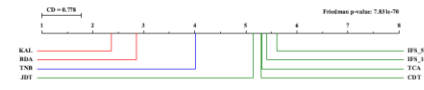
- **KAL obtains better performance than 20 comparative methods on 14 Android mobile apps.**



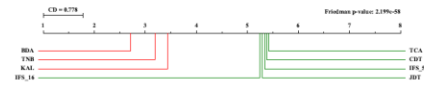
(a) EAREcall



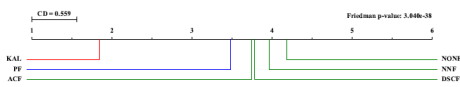
(b) EAF-measure



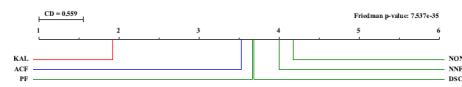
(a) EAREcall



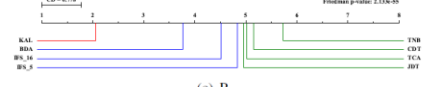
(b) EAF-measure



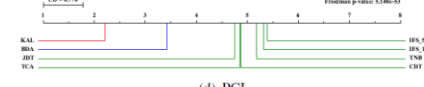
(c) Popt



(d) PCI

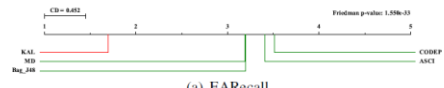


(c) Popt

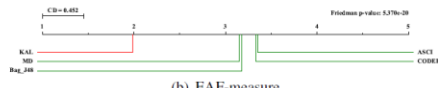


(d) PCI

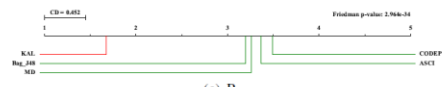
- Statistical test for our KAL method and five instance selection based methods



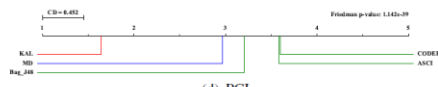
(a) EAREcall



(b) EAF-measure

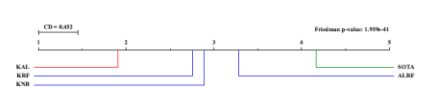


(c) Popt

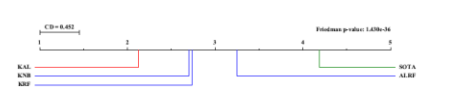


(d) PCI

- Statistical test for our KAL method and seven transfer learning based methods



(a) EAREcall



(b) EAF-measure



(c) Popt



(d) PCI

- Statistical test for our KAL method and four classifier combination based methods

- Statistical test for our KAL method, its three variants, and the state-of-the-art method