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Automated Detection of Related Software Changes by Probabilistic Neural Networks Model

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Abstract : Current software are continuously updating. The change between two versions usually involves multiple program entities (e.g., packages, classes, methods, attributes) with multiple purposes (e.g., changed requirements, bug fixing). It is hard for developers to understand which changes are made for the same purpose. Whether two changes are related is not decided by the relationship between this two entities in the program. In this paper, we summarized 4 coupling rules(16 instances) and 4 state-combination types at the class, method and attribute levels for software change. Related Change Vector (RCV) are defined based on coupling rules and state-combination types, and applied to classify related software changes by using Probabilistic Neural Network during a software updating.

Keywords : PNN, related change, state-combination, logical coupling, software entity
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