Automated Program Synthesis

Description

Program synthesis is a foundational technique for automated program repair (APR). There are basically two types of program synthesis – *inductive* program synthesis [2] and *deductive* program synthesis [4], of which the former is more widely applied in the APR field [6]. One example of the inductive program synthesis is the oracle-guided component-based approach [3] which is utilized in the state of the art APR tool Angelix [5]. There also exist other program synthesis techniques such as *condition-based synthesis* [7] and *syntax-guided synthesis* [1].

The student should examine and discuss the current state-of-art automated program synthesis techniques.

References


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