Abstract:
The earlier performance problems are detected, the easier they can be solved. Performance evaluations during the implementation phase of software projects cause overhead for developers. Unless performance evaluations are highly automated, they are not adopted in practice. This paper presents an approach to introduce performance awareness in Java Enterprise Edition (EE) integrated development environments (IDE) by providing automated model-based performance evaluations. The approach predicts response times of Java EE component operations and provides feedback to the developer within the IDE. Response time predictions are performed based on the component implementation and the response time of required services. The source code of the component to be evaluated is parsed and represented as an abstract syntax structure. This structure is then converted into a performance model representing the control flow of component operations and calls to required services. The response time of external calls is parameterized using monitoring data acquired using application performance monitoring (APM) tools from production systems.
Developers are provided with immediate feedback, if the estimated response time of a component operation exceeds a predefined threshold.