

# Security with AspectJ

Emin İslam Tatlı

Department of Computer Science, University of Mannheim  
tatli@th.informatik.uni-mannheim.de

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## Abstract

In software engineering, modularity of application designs and implementations is aimed for the better management of software development process. Procedural languages (e.g. Pascal, C) and afterwards object-oriented programming languages (e.g. C++, Java) were proposed to design modular software architectures. But both programming concepts have suffered from not separating the main business logic and other non-functional logics like security, exceptions, database transactions, logging, etc.

Aspect-oriented programming (AOP) is proposed to enhance modularity by separating crosscutting concerns. AspectJ, an aspect-oriented extension to Java, is the first successful implementation of AOP and has showed that the idea behind AOP can be enforced in practice.

In my seminar talk, I will explain the dilemmas and the crosscutting problems in procedural and object-oriented programming concepts. AspectJ and its terminology will be then explained and illustrated by examples. At the end, how AspectJ can support security requirements (e.g. integrity, confidentiality, authorization) will be discussed by presenting live demos.