



Thesis Title:

Generating Integration Test Cases for Object-Oriented Applications

Description: An application typically consists of several units and components. In integration testing the interface and interactions of different units and components are tested. Considering an existing .NET application (e.g., C#) that is made of several classes, the goal in the thesis is to automatically detect the dependencies and interactions among different classes in order to derive integration test specifications.

Expected Outcome: 1) algorithm(s) and tool(s) to analyze and detect dependencies of different application units in terms of class coupling, and 2) generating appropriate integration test cases

This thesis is defined as part of the PiiATest project which is an ongoing research project on integration testing with ABB Process Automation in Västerås.

Competence: C# programming skills and knowledge of software testing.

Contact Person: Mehrdad Saadatmand (mehrdad@sics.se), RISE SICS Västerås.

Misc: The thesis may also be taken as a joint-work by 2 students.

Application: To apply please send your CV along with the list of courses you have taken and their grades to mehrdad@sics.se. In your CV provide a short description of previous projects that you have done.

About SICS: *RISE SICS Västerås is a research institute with the aim to strengthen the innovation system in the Mälardalen region by offering applied research to both private and public organizations. Our projects typically involve a team of researchers and focus on delivering tangible results that create immediate and long-term value, based on the latest research results. We are constantly growing and are looking for researchers who enjoy the challenge of working in close collaboration with industry. SICS Västerås has a flexible organization that develops and applies methods and solutions in close collaboration with industrial, public and academic partners. Our core values are to be open-minded, value-driven, research-oriented, and to have fun! Read more about us at www.sics.se*

RISE – The Swedish Research Institute: *The RISE institutes Innventia, SP, and Swedish ICT have merged in order to become a stronger research and innovation partner. Through our international collaboration programmes with academia, industry, and the public sector, we ensure the competitiveness of the Swedish business community on an international level and contribute to a sustainable society. Our 2,200 employees support and promote all manner of innovative processes, and our roughly 100 testbeds and demonstration facilities are instrumental in developing the future-proofing of products, technologies, and services. RISE is fully owned by the Swedish state. www.ri.se*