



UNIVERSITY OF MALTA
L-Università ta' Malta

Faculty of Information and Communication Technology

Request for Collaborating ICT Industry Partner

“An Industry Case Study on Incremental Mutation Testing”

The *Process Engineering, Security and Testing Research Lab* (PEST) focuses on innovative research both in the academic and industrial arenas. One of our main aims is the investigation of ways in which cutting edge academic techniques can be applied to industry settings. To this end, we are constantly on the lookout for industrial partners who are willing to participate in collaborations on software process engineering, systems security and software testing.

Scope of study

We are currently involved in research concerned with improving the effectiveness of unit testing in the context of an Agile development environment. Whilst code coverage analysis is often used as a measure of test suite thoroughness, it has been shown to lead to a false sense of security. Mutation testing has proved to be a more effective way to assess test suite effectiveness. However, the technique is expensive, both in computational and human resource terms. We have developed and published a technique called “Incremental Mutation Testing” which seeks to exploit the characteristics of Agile development processes in order to reduce this expense and thus make Mutation Testing feasible for use in the industry. An initial pilot study has delivered promising results.

Industry Partner Profile

The ideal industry partner would be a company that (1) has adapted Agile development practices or is in the process of doing so, (2) makes extensive use of unit tests and would like to gain increased confidence in their effectiveness and (3) is willing to try out new concepts on an actual product within the company.

Benefits to the Industry Partner

Whilst the collaboration would provide an interesting case study to researchers, as an industry partner, you would also enjoy a number of benefits. In this particular project, the partner will gain an increased visibility into the effectiveness of their unit test suite. If the case study is successful, the partner should also gain more confidence in their automated tests and thus be able to increase turnaround time on new features and maintenance fixes.

Interested?

Further information can be obtained by us on pest.ict@um.edu.mt.

Process Engineering
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