

The 2016 IEEE International Conference on Software Quality, Reliability and Security

QRS 2016

Vienna, Austria, August 1-August 3, 2016
<http://paris.utdallas.edu/qrs16>

Keynote Speech

Automated Software Transplantation

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Abstract

Automated software transplantation involves transferring code from one system, a donor, into another potentially entirely unrelated system, the host. The aim is to transfer functionality from the donor to the host with minimal effort from the software engineer.

This keynote will present recent results and perspectives in automated transplantation, using techniques associated with Search Based Software Engineering (SBSE). It will also cover recent advances in Genetic Improvement and Deep Parameter Optimisation.

This keynote reports the results of joint work with Earl Barr, Bill Langdon, Yue Jia, Jens Krinke, Alex Marginean, Justyna Petke, Wes Weimer and Fan Wu. The transplantation work won a silver medal for human competitive results at GECCO 2014, the SSBSE 2014 challenge, and an ACM distinguished paper award at ISSTA 2015. It was also covered by WIRED and the BBC world Service.

About the speaker



Mark Harman is professor of Software Engineering in the Department of Computer Science at University College London, where he directs the CREST center and is Head of Software Systems Engineering group. He is widely known for work on source code analysis, software testing, app store analysis and Search Based Software Engineering (SBSE), a field he co-founded and which has grown rapidly to include over 1,600 authors, from nearly 300 institutions spread over more than 40 countries.