

# Special Issue on Automatic Software Repair Empirical Software Engineering

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deadline: October 31st 2016

## Editors of the Special Issue

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## Description of the Special Issue

Despite powerful advances in programming languages and bug detection, software bugs affect virtually all software products and services. The figures are overwhelming: for instance, the Mozilla bug repository, which includes the Firefox browser, now receives about 200 new bug reports daily. Even worse, many production failures are never reported by users. Crash reporting systems, which are embedded in major software products including operating system, office and internet applications, give a glimpse of the scope of this issue. For example, each day Mozilla's crash reporting system receives about 40,000 crash reports for one version of Firefox alone.

In response to this problem, there has been a recent research focus on techniques to reduce maintenance the costs associated with software repair. This generally consists of automatically fixing software defects or continuing in the face of failures. One example of automatic repair is patch generation, where source code is synthesized to fix a particular bug. Another example is runtime patching, in which behavior is corralled into acceptability in the face of field failures at runtime.

The goal of this special issue is to gather the latest advances in automatic software repair. Particular attention will be paid to empirical evaluations. We seek to attract high quality contributions that advance the state-of-the-art in automated software repair, including both extensions of conference publications or journal-first submissions.

The Empirical Software Engineering Journal (EMSE) has the highest two-year and five-year impact factors among all software engineering journals.

## Submission Topics

The topics of interest include, but are not limited to:

- automatic patch generation
- runtime software repair and behavior modification
- empirical studies for software repair
- human studies of patch quality
- social aspects of automatic software repair
- reports on industrial applications of automatic software repair
- machine learning for software repair
- automatic repair of domain-specific programs
- benchmarks for software repair
- integration of software repair in development processes
- automatic repair and DevOps
- automatic repair of vulnerabilities
- cost and economics of automatic software repair
- languages and frameworks for repair
- patch recommendation and suggestion
- automatic repair of data structure or concurrency errors
- the use of program repair as a client for other analyses (e.g., fault localization)

## Submission deadline

The submission deadline is October 31st 2016.

## Formatting & Submission Instructions

Papers should be submitted through the Empirical Software Engineering website (<http://www.editorialmanager.com/emse/>). Please choose "SI: Automatic Software Repair" as the article type. For formatting guidelines as well as submission instructions, visit <https://www.editorialmanager.com/emse/default.aspx>



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