

# ***Rx: Treating Bugs as Allergies – A Safe method to Survive Software Failures***

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## Overview

- Software defects account for up to 40% of system failures
- Authors created and implemented Rx, system for surviving software failures
- General idea is to modify environment, to remove “allergen”
- Rx works with deterministic and non-deterministic bugs
- Rx performs better than two other approaches

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## Previous methods for surviving software failures

- Rebooting: mainly to handle hardware failures. Not good for deterministic bugs.
- Checkpointing and recovery: checkpoint, rollback and re-execute. Deterministic bugs may be corrected in aggressive, expensive approaches (double software development costs and efforts).
- Application-specific recovery: e.g. killing processes. Not good in deterministic bugs either
- Non-conventional approaches: e.g. Failure-Oblivious computing and reactive immune system: they may be unsafe\* (lead to program misbehavior)
- Up to now: not sufficient feedback for debugging

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