

Principles of Persistent Programming

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Abstract

Persistent programming is the art of developing programs that operate on persistent (non-volatile) states that survive program termination, be it planned or abrupt (e.g. due to a power failure). Persistent programming poses several important challenges: 1) persistent systems have complex – and often unspecified – semantics in that operations do not generally persist in their execution order; 2) software bugs in persistent settings can lead to permanent data corruption; and 3) traditional testing techniques are inapplicable in persistent settings. Can formal methods come to the rescue?

2012 ACM Subject Classification Theory of computation → Program verification

Keywords and phrases Persistent Programming

Digital Object Identifier 10.4230/LIPIcs.CONCUR.2024.2

Category Invited Talk

Funding UKRI fellowship MR/V024299/1, EPSRC grant EP/X037029/1 and VeTSS



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35th International Conference on Concurrency Theory (CONCUR 2024).

Editors: Rupak Majumdar and Alexandra Silva; Article No. 2; pp. 2:1–2:1

Leibniz International Proceedings in Informatics



LIPICs Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany