

What Are We Doing With Our Lives? Nobody Cares About Our Concurrency Control Research

Andrew Pavlo
Carnegie Mellon University
pavlo@cs.cmu.edu

ABSTRACT

Most of the academic papers on concurrency control published in the last five years have assumed the following two design decisions: (1) applications execute transactions with serializable isolation and (2) applications execute most (if not all) of their transactions using stored procedures. I know this because I am guilty of writing these papers too. But results from a recent survey of database administrators indicates that these assumptions are not realistic. This survey includes both legacy deployments where the cost of changing the application to use either serializable isolation or stored procedures is not feasible, as well as new “greenfield” projects that not encumbered by prior constraints. As such, the research produced by our community is not helping people with their real-world systems and thus is essentially irrelevant.

In this talk/denouncement, I will descend from my ivory tower and argue that we need to rethink our agenda for concurrency control research. Recent trends focus on asking the wrong questions and solving the wrong problems. I contend that the real issues that will have the most impact are not easily solved by more “clever” algorithms. Instead, in many cases, they can only be solved by hardware improvements and artificial intelligence.

1. ACKNOWLEDGEMENTS

This work was supported (in part) by the Intel Science and Technology Center for Big Data and the U.S. National Science Foundation (CCF-1438955).

2. BIOGRAPHIES

Andrew Pavlo is an Assistant Professor of Databaseology in the Computer Science Department at Carnegie Mellon University. At CMU, he is a member of the Database Group and the Parallel Data Laboratory. His work is also in collaboration with the Intel Science and Technology Center for Big Data.

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

SIGMOD'17 May 14-19, 2017, Chicago, IL, USA

© 2017 Copyright held by the owner/author(s).

ACM ISBN 978-1-4503-4197-4/17/05.

DOI: <http://dx.doi.org/10.1145/3035918.3056096>