

Srivatsan Ravi

Postdoctoral researcher/ Visiting Assistant Professor Purdue University

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Education

Ph.D in Computer Science (June 2015), Technische Universität Berlin, Germany

Advisors: Anja Feldmann and Petr Kuznetsov

Thesis: On the Cost of Concurrency in Transactional Memory

Masters in Computer Science (July 2010), Cornell University, U.S.A

Bachelors in Computer Science (June 2007), Anna University, India

High School (April 2003), D. A. V Boys, Central Board of Secondary Education, Gopalapuram, India

Research Interests

Consistency and fault-tolerance in distributed systems

Shared-memory algorithms for concurrent data structures

Modelling and application of distributed techniques in computational sciences

Employment

Postdoctoral Researcher/ Visiting Assistant Professor, Purdue University

Distributed Programming Group, Dept. of Computer Science

Oct 2015- present

Research Assistant

Internet Network Architectures, TU Berlin, September 2013-July 2015

Deutsche Telekom Labs, TU Berlin, October 2010-August 2013

Graduate visiting student

INFRES, Télécom ParisTech, Spring 2015

Department of Computer Science, The Technion, Spring 2012

Department of Computer Science, Yale University, Summer 2010

Systems Developer, Hover Inc., India (assets acquired)


















Nov 2007-May 2009



Web product provided enhanced contextual browsing and multi-lingual intext content

Undergraduate Intern, *Google Summer of Code*

Work on Freenet Project Inc., Summer '07






Conference Publications ¹

- [GKR16] Vincent Gramoli, Petr Kuznetsov, and Srivatsan Ravi. In the search for optimal concurrency. In *Structural Information and Communication Complexity - 23rd International Colloquium, SIROCCO 2016, Helsinki, Finland, July 19-21, 2016, Revised Selected Papers*, pages 143–158, 2016.  
- [SPA⁺16b] Bo Sang, Gustavo Petri, Masoud Saeida Ardekani, Srivatsan Ravi, and Patrick Th. Eugster. Programming scalable cloud services with AEON. In *Proceedings of the 17th International Middleware Conference, Trento, Italy, December 12 - 16, 2016*, page 16, 2016.
- [KR15c] Petr Kuznetsov and Srivatsan Ravi. Progressive transactional memory in time and space. In *Parallel Computing Technologies - 13th International Conference, PaCT 2015, Petrozavodsk, Russia, August 31 - September 4, 2015, Proceedings*, pages 410–425, 2015.  
- [KR15a] Petr Kuznetsov and Srivatsan Ravi. Grasping the gap between blocking and non-blocking transactional memories. In *Distributed Computing - 29th International Symposium, DISC 2015, Tokyo, Japan, October 7-9, 2015, Proceedings*, pages 232–247, 2015.  
- [KR15b] Petr Kuznetsov and Srivatsan Ravi. On partial wait-freedom in transactional memory. In *Proceedings of the 2015 International Conference on Distributed Computing and Networking, ICDCN 2015, Goa, India, January 4-7, 2015*, page 10, 2015.  
- [GKRS15b] Vincent Gramoli, Petr Kuznetsov, Srivatsan Ravi, and Di Shang. A concurrency-optimal list-based set (brief announcement). In *Distributed Computing - 29th International Symposium, DISC 2015, Tokyo, Japan, October 7-9, 2015*. 
- [AKK⁺15] Dan Alistarh, Justin Kopinsky, Petr Kuznetsov, Srivatsan Ravi, and Nir Shavit. Inherent limitations of hybrid transactional memory. In *Distributed Computing - 29th International Symposium, DISC 2015, Tokyo, Japan, October 7-9, 2015, Proceedings*, pages 185–199, 2015. Extended version of results from [AKK⁺14].  
- [AHKR13] Hagit Attiya, Sandeep Hans, Petr Kuznetsov, and Srivatsan Ravi. Safety of deferred update in transactional memory. *2013 IEEE 33rd International Conference on Distributed Computing Systems (ICDCS)*, 0:601–610, 2013.  
- [GKR12a] Vincent Gramoli, Petr Kuznetsov, and Srivatsan Ravi. From sequential to concurrent: correctness and relative efficiency (brief announcement). In *Principles of Distributed Computing (PODC)*, pages 241–242, 2012.  
- [KR11] Petr Kuznetsov and Srivatsan Ravi. On the cost of concurrency in transactional memory. In *International Conference on Principles of Distributed Systems (OPODIS)*, pages 112–127, 2011.  



¹ indicates alphabetical author ordering and  indicates conference/workshop speaker.

- [SVS⁺06] K. Sakthivel, R. Venkatraghavan, S. Shivashankar, R. Srivatsan, and T. Srinivasan. Independent navigation and functioning of intelligent agents by social interaction. In *Computational Intelligence for Modelling, Control and Automation, 2006 and International Conference on Intelligent Agents, Web Technologies and Internet Commerce, International Conference on*, page 252, 28 2006-dec. 1 2006.



Workshop papers

- [SRN⁺16] Derek Schatzlein, Srivatsan Ravi, Youngtae Noh, Masoud Saeida Ardekani, and Patrick Eugster. The misbelief in delay scheduling. *To appear in proceedings of International Workshop on Distributed Cloud Computing (DCC)*, 2016.
- [AKK⁺14] Dan Alistarh, Justin Kopinsky, Petr Kuznetsov, Srivatsan Ravi, and Nir Shavit. Inherent limitations of hybrid transactional memory. *6th Workshop on the Theory of Transactional Memory, Paris, France*, 2014. 
- [GKR12c] Vincent Gramoli, Petr Kuznetsov, and Srivatsan Ravi. Sharing a sequential data structure: correctness definition and concurrency analysis. *4th Workshop on the Theory of Transactional Memory, Madeira, Portugal*, 2012.  
- [AHKR12] Hagit Attiya, Sandeep Hans, Petr Kuznetsov, and Srivatsan Ravi. What is safe in transactional memory. *4th Workshop on the Theory of Transactional Memory, Madeira, Portugal*, 2012.  

Book chapters and journals

- [KR17] Petr Kuznetsov and Srivatsan Ravi. Grasping the gap between blocking and non-blocking transactional memories. *Journal of Parallel and Distributed Computing*, 101:1 – 16, 2017. 
- [AHKR15] Hagit Attiya, Sandeep Hans, Petr Kuznetsov, and Srivatsan Ravi. Safety and deferred update in transactional memory. In Rachid Guerraoui and Paolo Romano, editors, *Transactional Memory. Foundations, Algorithms, Tools, and Applications*, volume 8913 of *Lecture Notes in Computer Science*, pages 50–71. Springer International Publishing, 2015. Extended version of results from [AHKR13] and [AHKR12]. 

Articles and technical reports ²

- [KR12] Petr Kuznetsov and Srivatsan Ravi. WTTM 2011: the third workshop on the theory of transactional memory. *SIGACT News*, 43(1):87–92, 2012. 
- [RGL10] Srivatsan Ravi, Vincent Gramoli, and Victor Luchangco. Transactional memory, linking theory and practice. *SIGACT News*, 41(4):109–115, 2010. 
- [SPA⁺16a] Bo Sang, Gustavo Petri, Masoud Saeida Ardekani, Srivatsan Ravi, and Patrick Eugster. Programming scalable cloud services with atomic events and ownership network (aeon). *Purdue University Technical Report*, 2016.

²Tech reports of published papers also available on http://arxiv.org/find/cs/1/au:+Ravi_Srivatsan/0/1/0/all/0/1

- [Rav15] Srivatsan Ravi. *On the Cost of Concurrency in Transactional Memory*. PhD thesis, Technische Universität Berlin, June 2015. <http://arxiv.org/abs/1407.6876>.
- [GKRS15a] Vincent Gramoli, Petr Kuznetsov, Srivatsan Ravi, and Di Shang. A concurrency-optimal list-based set. *CoRR*, abs/1502.01633, 2015. Extended version of results from [GKRS15b]. [A](#)
- [KR15d] Petr Kuznetsov and Srivatsan Ravi. Why transactional memory should not be obstruction-free. *CoRR*, abs/1502.02725, 2015. Extended version of results from [KR15a]. [A](#)
- [GKR12b] Vincent Gramoli, Petr Kuznetsov, and Srivatsan Ravi. Optimism for boosting concurrency. *CoRR*, abs/1203.4751, 2012. Extended version of results from [GKR12a] and [KR12]. [A](#)

Teaching

Instructor

Distributed systems (g) (Spring 2016), Purdue University

Teaching assistance

Network Protocols and Architectures (Winter 2014-15 and Winter 2011-12), TU Berlin

Network Algorithms (Winter 2013-14), TU Berlin

Foundations of Distributed Systems (Summer 2012 and Summer 2011), TU Berlin

Selected Presentations

Grasping the Complexity Gap between Blocking and Non-blocking Transactional Memories, International Symposium of Distributed Computing (DISC) 2015, Tokyo, Japan

Towards Safe In-memory Transactions, CERIAS Seminar, Purdue University (August 2016)

Inherent Limitations of Hybrid Transactional Memory, International Symposium of Distributed Computing (DISC), 2015, Tokyo, Japan and Hewlett Packard Labs, Palo Alto (July 2016)

Synchronization using Transactional Memory, Instituto Superior Technico (IST) Lisbon (July 2015) and NEC Research Lab Heidelberg (June 2015)

Progressive Transactional memory in Time and Space, International Conference on Parallel Computing Technologies (PaCT) 2015, Petrozavodsk, Russia

On Partial Wait-freedom in Transactional memory, International Conference on Distributed Computing and Networking (ICDCN) 2015, Goa, India

Safety in Distributed Computing, Mathematical methods in Distributed computing, Volkswagen Stiftung International Workshop, University of Bremen, August 2013

Safety of Deferred-update semantics in Transactional Memory, International Conference on Distributed Computing Systems (ICDCS) 2013, Philadelphia

Optimistic Transactions vs. Pessimistic Locks: Scalable Synchronization group, Oracle Labs, Burlington (July 2013).

From Sequential to Concurrent: Correctness and Relative Efficiency, Principles of Distributed Computing (PODC), 2012, Madeira, Portugal and Technion Systems Lunch (Spring 2012), The Technion, Haifa.

On the Cost of Concurrency in Transactional Memory. International Conference on Principles of Distributed Systems (OPODIS), 2011, Toulouse, France and TRANSFORM Winter School, March 2011, INRIA Rennes, France.

Network Topology, Routing and Security Model of Freenet. Free and Open Source Software (FOSS.IN) Conference 2008, Indian Institute of Science.

Achievements and Distinctions

Marie Curie Initial Training Network Ph.D Fellowship 2010-2013

Selected for *Google Summer of Code* 2007, Freenet Project

Finished Top-20 in *IBM-Inter Collegiate Programming Contest* for the ACM India Regionals and Online Qualifiers

Winner-*Anna University Onsite Debugging Contest*, Kurukshetra 2007, Anna university

Second place-*Anna University Programming Contest*, Abacus 2007, Anna University

Second place-*Anna University Programming Contest*, Kurukshetra 2007, Anna University

Seminars and Training Schools

Mathematical methods in Distributed Computing, Volkswagen Stiftung International Workshop, University of Bremen, August 2013

Hot topics in Distributed Computing (HPDC), La Plagne, France, March 2012

Ph.D Summer School, Microsoft Research (MSR) Cambridge, July 2012

Dagstuhl Seminar on *Abstractions for scalable multi-core computing*, April 2012

Dagstuhl Seminar on *Applications of Combinatorial Topology to Computer Science*, March 2012

Community services

Conference reviews: International Colloquium on Structural Information and Communication Complexity (SIROCCO) 2016

Journal reviews: *Distributed Computing (DC)*, Springer; *Euro-TM Lecture notes in Computer science*, Springer 2015

One of the organizers of the Workshop on the Theory of Transactional Memory (WTTM'11) held in conjunction with DISC'11 in Rome.

One of the student editors of the report on the Dagstuhl Seminar on *Applications of Combinatorial Topology to Computer Science*, March 2012. Available at the Dagstuhl website.