TUDOR DAVID

RESUME

IBM Research Zurich,
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Research Interests:

Blockchain, concurrent and distributed systems, multi-core architectures, new memory technologies.

Education

2012 - 2017 **École Polytechnique Fédérale de Lausanne, (EPFL)**, Lausanne, Switzerland
PhD in Computer Science
Thesis: Universally scalable concurrent data structures.
Advisor: Prof. Rachid Guerraoui

2010 - 2012 **École Polytechnique Fédérale de Lausanne, (EPFL)**, Lausanne, Switzerland
MSc in Computer Science, 5.63/6 GPA
Thesis: Scalability and Performance of Large Scale Distributed Systems in Tacc.
Advisor: Prof. Rachid Guerraoui

2006 - 2010 **Technical University of Cluj-Napoca**, Cluj-Napoca, Romania
BSc in Computer Science, 9.59/10 GPA
Thesis: Ant Inspired Method for Automatic Web Service Composition and Selection.
Advisor: Prof. Ioan Salomie

Experience

- **Oct 2017 - present**. Postdoctoral researcher.
  IBM Research, Zurich, Switzerland.
  Area of research: blockchain technologies, byzantine consensus.
- **Sep 2012 - 2017**. Doctoral assistant.
  LPD (Distributed Programming Laboratory), EPFL, Switzerland.
  Topic: concurrent data structures; synchronization; durable data structures; concurrency control.
- **Summer 2016**. Research intern.
  Microsoft Research, Cambridge, UK.
  Topic: concurrent data structures for non-volatile RAM.
- **Summer 2015**. Research intern.
  VMware Research Group, Palo Alto, CA.
  Topic: design of a scalable distributed serializable transaction system.
- **Sep 2011 - Mar 2012**. Software engineering intern.
  OptumSoft Inc., Menlo Park, CA.
  Topic: large-scale key-value store using TACC, a development platform for distributed applications.
- **Summer 2011, Summer 2012**. Research intern.
  LPD (Distributed Programming Laboratory), EPFL, Switzerland.
  Topic: explicit message-passing consensus protocols in large multi-cores.
- **2008-2010**. Student research assistant.
  DSRL (Distributed Systems Research Lab) Technical University of Cluj-Napoca, Romania.
  Topic: biologically-inspired methods for automatic web service composition and discovery.
- **Summer 2009**. Research intern.
  Laboratoire de l'Informatique du Parallelisme, Ecole Normale Superieure de Lyon, France.
  Topic: modeling the computation and communication-related characteristics of a heterogeneous multi-core in the context of the development of a scheduler for streaming applications.

Main Publications

- Tudor David and Rachid Guerraoui. **Concurrent Search Data Structures Can Be Blocking and Practically Wait-Free**, 28th Symposium on Parallelism in Algorithms and Architectures (SPAA), Monterey, CA, 2016.
- Tudor David, Rachid Guerraoui and Vasileios Trigonakis. **Asynchronized Concurrency: The Secret to Scaling Concurrent Search Data Structures**, 20th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Istanbul, Turkey, 2015.
- Tudor David, Rachid Guerraoui and Maysam Yabandeh. **Consensus Inside**, 15th International Middleware Conference (Middleware), Bordeaux, France, 2014, **Best Paper Award**.
- Tudor David, Rachid Guerraoui and Vasileios Trigonakis. **Everything You Always Wanted to Know about Synchronization but Were Afraid to Ask**, Symposium on Operating Systems Principles (SOSP), Farmington, PA, 2013.

Submitted/in preparation:

- Marcos K. Aguilera, Tudor David, and Rachid Guerraoui. **Locking Timestamps Versus Locking Objects**.
- Tudor David, Aleksandar Dragojevic, Rachid Guerraoui, and Igor Zablotchi. **Log-Free Concurrent Data Structures**.

Achievements and Distinctions

- VMware Academic Graduate Fellowship, 2015 - 2016;
- Best paper award, ACM Middleware Conference, 2014;
- EPFL Fellowship, 2012 - 2013;
- Merit Scholarship, Technical University of Cluj-Napoca (TUCN), 2008 - 2010;
- Study Scholarship, Technical University of Cluj-Napoca (TUCN), 2006 - 2008;

Professional Service

- **Shadow PC member:** EuroSys Conference on Computer Systems 2015 (heavy PC member).
- **External reviewer:** SPAA 2017.

Teaching Experience Teaching assistant:

- **Information, Calcul, Communication**, Undergraduate Course, EPFL, 2014, 2015, 2016 (in French);
- **System-Oriented Programming**, Undergraduate Course, EPFL, 2014, 2015 (in French);
- **Concurrent Algorithms**, Graduate Course, EPFL, 2013 - 2014 (in English);
- **Programmation II**, Undergraduate Course, EPFL, 2013 (in French);
- **Mathematiques II**, Undergraduate Course, UNIL, 2016 (in French);
- **Mathematiques - Mise à niveau**, Undergraduate Course, EPFL, 2017 (in French).

Lecturing:

- **Concurrent Algorithms**, Graduate Course, EPFL, 2016 - taught several lectures.

Mentoring

- **Junxiong Wang**. Graduate student. MSc. thesis.
  Logical Interval-based Distributed Transaction System, Feb. - Jun. 2017;
- **Quentin Laville**. Graduate student. Semester project.
  ASCYLIB-wf: Enhancing ASCYLIB With Wait-free Algorithms, Sept. 2016 - Jan. 2017;
- **Egeyar Bacioglu**. Graduate student. MSc. thesis.
  Using Hardware Transactional Memory in Concurrent Data Structures., Feb. - Jun. 2016;
- **Alexandru Ciprian Farcasanu**. Graduate student. Semester project.
  gcmalloc: Memory Allocation with Garbage Collection, Sept. 2015 - Jan. 2016;
- **Egeyar Bacioglu**. Graduate student. Semester project.
  Implementing Randomized Concurrent Data structures, Feb. - Jun. 2015;
- **Radmila Popovic**. Undergraduate student. Research internship.
  Cross-platform Implementations of Reader-Writer Locks, Jun. - Aug. 2014;
- **Chengzhen Wu**. Graduate student. Semester project.
  Cross-platform Implementations of Barrier Algorithms, Feb. - Jun. 2014;
- **Oana Balmau and Igor Zablotchi**. Graduate students. Semester projects.
  Increasing the Concurrency of RocksDB, Feb. - Jun. 2014
  Concurrent Binary Search Trees on Many-cores., Sept. 2013 - Jan. 2014;
- **Ugur Gurel**. Graduate student. Research internship.
  Designing Scalable Concurrent Hash Tables, Sept. 2012 - Feb. 2013.

Software projects

- ASCYLIB (github.com/LPD-EPFL/ASCYLIB): a concurrent data structure library;
- libnvram (github.com/LPD-EPFL/libnvram): an NVRAM concurrent data structure library;
- libslock (github.com/tudordavid/libslock): a portable lock algorithm library;
- ConsensusInside (github.com/LPD-EPFL/consensusinside): message-passing consensus for multi-cores.

Languages

- **English:** fluent; **French:** good; **German:** basic; **Romanian:** native.

Updated on September 12, 2017.