

IBM Research Zurich,  
Säumerstrasse 4,  
CH-8803, Rüschlikon, Switzerland

+41-44-724-8585  
contact@tudordavid.com  
http://tudordavid.com

---

**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 Supérieure 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**

- Marcos K. Aguilera, Tudor David, Rachid Guerraoui, and Junxiong Wang. **Locking Timestamps Versus Locking Objects**, Symposium on Principles of Distributed Computing (PODC), London, UK, 2018 (to appear).
- Tudor David, Aleksandar Dragojevic, Rachid Guerraoui, and Igor Zablotchi. **Log-Free Concurrent Data Structures**, USENIX Annual Technical Conference (ATC), Boston, MA, 2018 (to appear).
- 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.

#### Achievements and Distinctions

- EPFL Teaching Assistant Award, 2017;
- 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 a subset of the 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](https://github.com/LPD-EPFL/ASCYLIB)): a concurrent data structure library;
- libnvram ([github.com/LPD-EPFL/libnvram](https://github.com/LPD-EPFL/libnvram)): an NVRAM concurrent data structure library;
- libsllock ([github.com/tudordavid/libsllock](https://github.com/tudordavid/libsllock)): a portable lock algorithm library;
- ConsensusInside ([github.com/LPD-EPFL/consensusinside](https://github.com/LPD-EPFL/consensusinside)): message-passing consensus for multi-cores.

#### Languages

- **English:** fluent (C2); **French:** good (B2); **German:** basic (A2); **Romanian:** native.