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**Research Interests:**

Concurrent and distributed systems, multi-core architectures, new memory technologies, blockchains.

**Experience**

- **Oct 2019 - present.** Principal member of technical staff.  
*Oracle / Oracle Labs, Zurich, Switzerland.*  
Topic: distributed database systems.
- **Oct 2017 - Sep 2019.** Postdoctoral researcher.  
*IBM Research, Zurich, Switzerland.*  
Topic: blockchain technologies, byzantine consensus.
- **Sep 2012 - Sep 2017.** Doctoral assistant.  
*DCL (Distributed Computing Laboratory), EPFL, Switzerland.*  
Topic: concurrent data structures; synchronization; durable data structures; concurrency control.
- **Summer 2016.** Research intern.  
*Microsoft Research.*  
Topic: concurrent data structures for non-volatile RAM.
- **Summer 2015.** Research intern.  
*VMware Research Group.*  
Topic: design of a scalable distributed serializable transaction system.
- **Sep 2011 - Mar 2012.** Software engineering intern.  
*OptumSoft Inc..*  
Topic: large-scale key-value store using TACC, a development platform for distributed applications.
- **Summer 2011, Summer 2012.** Research intern.  
*DCL (Distributed Computing 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: scheduling streaming applications on a heterogeneous multi-core.

**Education**

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|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2012 - 2017 | <b>École Polytechnique Fédérale de Lausanne, (EPFL),</b> Lausanne, Switzerland<br>PhD in Computer Science<br>Thesis: Universally scalable concurrent data structures.<br>Advisor: Prof. Rachid Guerraoui                                    |
| 2010 - 2012 | <b>École Polytechnique Fédérale de Lausanne, (EPFL),</b> Lausanne, Switzerland<br>MSc in Computer Science, 5.63/6 GPA<br>Thesis: Scalability and Performance of Large Scale Distributed Systems in Tacc.<br>Advisor: Prof. Rachid Guerraoui |
| 2006 - 2010 | <b>Technical University of Cluj-Napoca,</b> Cluj-Napoca, Romania<br>BSc in Computer Science, 9.59/10 GPA<br>Thesis: Ant Inspired Method for Automatic Web Service Composition and Selection.<br>Advisor: Prof. Ioan Salomie                 |

**Main Publications**

- Chrysoula Stathakopoulou, Tudor David, and Marko Vukolic. **Mir-BFT: High Throughput BFT for Blockchains**, in submission, available on arXiv, 2019.
- Tudor David, Aleksandar Dragojevic, Rachid Guerraoui, and Igor Zablotchi. **Log-Free Concurrent Data Structures**, USENIX Annual Technical Conference (ATC), 2018.

- Marcos K. Aguilera, Tudor David, Rachid Guerraoui, and Junxiong Wang. **Locking Timestamps Versus Locking Objects**, Symposium on Principles of Distributed Computing (PODC), 2018.
- 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), 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), 2015.
- Tudor David, Rachid Guerraoui and Maysam Yabandeh. **Consensus Inside**, 15th International Middleware Conference (Middleware), 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), 2013.

## Patents

- Aleksandar Dragojevic and Tudor David, **Memory management in non-volatile memory**, US Patent App. 15/638,164, 2018.

## 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;

## Recent Professional Service

- **PC Member:** DISC 2020, Usenix ATC 2021.
- **Reviewer:** Distributed Computing, 2018, 2021.
- **External reviewer:** SPAA 2017.
- **Sponsorship chair:** EuroSys 2021.

## 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.
- **Distributed Algorithms**, Graduate Course, EPFL, 2018 - invited lecturer.

Mentoring:

- Co-supervised 2 Masters theses, 6 semester project students, 3 interns.

## Software projects

- ASCYLIB ([github.com/LPD-EPFL/ASCYLIB](https://github.com/LPD-EPFL/ASCYLIB)): a concurrent data structure library;
- libnvram (<http://dcl.epfl.ch/site/nvram>): an NVRAM concurrent data structure library;
- libslock ([github.com/tudordavid/libslock](https://github.com/tudordavid/libslock)): 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:** good (B2); **Romanian:** native.