Igor Zabloțchi

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Research Interests

State-machine replication, Byzantine fault tolerance, RDMA, non-volatile memory, concurrent data structures, concurrent memory reclamation

Education

2020	PhD in Computer Science, EPFL Thesis: *Distributed Computing with Modern Shared Memory* Thesis director: Rachid Guerraoui
2015	MSc in Computer Science, EPFL Thesis: *SMR-NoMembar — Eliminating Memory Barriers from Hazard Pointers* Supervisors: Maurice Herlihy and Rachid Guerraoui GPA: 5.91/6 — Ranked 2/89 in CS Section
2012	BSc in Computer Science, EPFL GPA: 5.83/6 — Ranked 1/77 in CS Section and 3/769 in EPFL overall

Experience

2021–	MIT CSAIL, Cambridge, MA — Postdoctoral Fellow • Advised by Nir Shavit • Topic: efficient large-scale machine learning
2019	Microsoft Research, Cambridge, UK — Research Internship • Supervised by Aleksandar Dragojević • Topic: hardware-software concurrent data structures
2018	Oracle Labs, Burlington, MA — Research Internship • Supervised by Virendra Marathe • Topic: fast RDMA-based consensus protocols, efficient multi-word compare-and-swap
2016	VMware Research, Palo Alto, CA — Research Internship • Supervised by Dahlia Malkhi and Ittai Abraham • Topic: transactions across blockchain ledgers with atomicity, fairness and expressiveness
2015	EPFL, Distributed Programming Laboratory — Research Internship • Supervised by Vasileios Trigonakis and Rachid Guerraoui • Topic: fast concurrent persistent key-value store
2014–2015	Brown University — MSc Thesis Project (exchange semester) • Supervised by Maurice Herlihy • Topic: fast and robust concurrent memory reclamation
2013	ABB Research Switzerland — Research Internship • Supervised by Ettore Ferranti and Yvonne-Anne Pignolet • Topics: building automation, brain-computer interface, domain-specific languages

Research Output

• PEER-REVIEWED CONFERENCE PAPERS [AUTHOR NAMES IN ALPHABETICAL ORDER]

2021 *Frugal Byzantine Computing*. DISC '21.
Marcos K. Aguilera, Naama Ben-David, Rachid Guerraoui, Dalia Papuc, Athanasios Xygkis and Igor Zablotchi.

2021 *Leaderless Consensus*. ICDCS 2021.
Karolos Antoniadis, Antoine Desjardins, Vincent Gramoli, Rachid Guerraoui and Igor Zablotchi.

2020 *Microsecond Consensus for Microsecond Applications*. OSDI '20
Marcos K. Aguilera, Naama Ben-David, Rachid Guerraoui, Virendra J. Marathe, Athanasios Xygkis and Igor Zablotchi.

2020 *Efficient Multi-word Compare and Swap*. DISC '20.
Rachid Guerraoui, Alex Kogan, Virendra J. Marathe and Igor Zablotchi.

2019 *The Impact of RDMA on Agreement*. PODC '19.
Marcos K. Aguilera, Naama Ben-David, Rachid Guerraoui, Virendra J. Marathe and Igor Zablotchi.

2018 *Log-Free Concurrent Data Structures*. USENIX ATC '18.
Tudor David, Aleksandar Dragojević, Rachid Guerraoui and Igor Zablotchi.

2018 *The Inherent Cost of Remembering Consistently*. SPAA '18.
Nachshon Cohen, Rachid Guerraoui and Igor Zablotchi

2017 *FloDB: Unlocking Memory in Persistent Key-Value Stores*. EuroSys '17.
Oana Balmau, Rachid Guerraoui, Vasileios Trigonakis and Igor Zablotchi.

2017 *The Disclosure Power of Shared Objects*. NETYS '17.
Peva Blanchard, Rachid Guerraoui, Julien Stainer and Igor Zablotchi.

2016 *Fast and Robust Memory Reclamation for Concurrent Data Structures*. SPAA '16.
Oana Balmau, Rachid Guerraoui, Maurice Herlihy and Igor Zablotchi.

• CONFERENCE PRESENTATIONS

2020 Microsecond Consensus for Microsecond Applications. OSDI '20

2020 Efficient Multi-word Compare and Swap. DISC '20

2018 The Inherent Cost of Remembering Consistently. SPAA '18

2017 The Disclosure Power of Shared Objects. NETYS '17.

2016 Fast and Robust Memory Reclamation for Concurrent Data Structures. SPAA '16.

• CONFERENCE POSTERS

2018 Log-Free Concurrent Data Structures. USENIX ATC '18

2017 FloDB: Unlocking Memory in Persistent Key-Value Stores. EuroSys '17

Languages

English & French — fluent
Romanian — native language

Honors & Awards

2022	EuroSys Roger Needham PhD Award — Honorable Mention
2021	EPFL Doctoral Program Thesis Distinction
2019	EPFL IC Teaching Assistant Award
2015	EPFL PhD Fellowship
2015	Brown University Presidential Fellowship for Incoming Graduate Students
2015	*Société Suisse d'Informatique* Prize — for achieving 2nd highest GPA in EPFL CS MSc Program
2012	EPFL MSc Excellence Fellowship
2012	EPFL Prize — for achieving 3rd highest GPA in 2012 graduating class

Teaching

• TEACHING ASSISTANT

2016-2020	Concurrent Algorithms. Graduate class. EPFL
2019	Information Security and Privacy. Graduate class. EPFL
2017	Digital System Design. Undergraduate class. EPFL
2016	Practice of Object-Oriented Programming. Undergraduate class. EPFL

• STUDENT ASSISTANT

2014-2015	Natural Language Processing. Graduate class. EPFL
2010-2014	Discrete Mathematics, Calculus, Linear Algebra. Undergraduate classes. EPFL

• MENTORING

2020-2021	Dalia Papuc. *Fast Byzantine Broadcast with RDMA*. Research Internship. EPFL
2020	Kristian Brünn. *Byzantine Fault Tolerant State Machine Replication with RDMA*. MSc Thesis. EPFL
2019-2020	Loïc Vandenberghe and Manuel Vidigueira. *Fast RDMA Consensus*. MSc Semester Project. EPFL
2018	Ivi Dimopoulou. *Implementation and Evaluation of 1-Fence Concurrent Persistent Data Structures*. MSc Semester Project. EPFL

Professional Service

• REVIEWER

2022	Transactions on Parallel Computing (journal)
2021	SRDS (International Symposium on Reliable Distributed Systems)
2021	Distributed Computing (journal)
2021	Algorithmica (journal)

• EXTERNAL REVIEWER

2022	PODC (Symposium on Principles of Distributed Computing)
2019–2021	DISC (International Symposium on Distributed Computing)
2017	IPDPS (International Parallel and Distributed Processing Symposium)
2015	SPAA (Symposium on Parallelism in Algorithms and Architectures)