

Fernando Pedone

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A Education

- PhD Computer Science, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, 1999.
Thesis title: The Database State Machine and Group Communication Issues.
- MSc Computer Science, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil, 1995.
- BSc Mechanical Engineering, University of Rio Grande (FURG), Rio Grande, Brazil, 1992.

B Employment History

- | | |
|-------------------|--|
| 09/2012 – present | Full Professor
University of Lugano (USI), Switzerland |
| 06/2013 – 12/2013 | Visiting Professor
Cornell University, USA |
| 01/2007 – 08/2012 | Associate Professor
University of Lugano (USI), Switzerland |
| 10/2004 – 12/2006 | Assistant Professor
University of Lugano (USI), Switzerland |
| 05/2002 – 09/2004 | Senior Researcher and Lecturer
Computer Networking Laboratory (EPFL), Switzerland |
| 01/2000 – 08/2003 | Research Scientist
Hewlett-Packard Laboratories (HP Labs), USA |
| 10/1996 – 01/2000 | Research and Teaching Assistant
Distributed Systems Laboratory (EPFL), Switzerland |
| 10/1995 – 09/1996 | Visiting Researcher
INRIA, France |

C Honors and Awards

1. Best paper award at the 31st IEEE International Symposium on Reliable Distributed Systems (SRDS), 2012. Paper “RAM-DUR: In-Memory Deferred Update Replication,” with D. Sciascia.
2. Best paper award at the 10th IEEE International Symposium on Network Computing and Applications (NCA), 2011. Paper “Belisarius: BFT storage with confidentiality,” with R. Padilha.
3. Best paper award at the 5th Latin-American Symposium on Dependable Computing (LADC), 2011. Paper “Byzantine Fault-Tolerant Deferred Update Replication,” with N. Schiper and J. E. Armendariz-Inigo.
4. Nominated by the thesis committee for the EPFL Best Thesis Award in 1999.

D Research and Creative Works

D.1 Books and Book Chapters

1. B. Charron-Bost, F. Pedone and A. Schiper, eds. *Replication: theory and practice*, Springer, 2009.
2. F. Pedone and A. Schiper. Modular approach to replication for availability. In *Replication: theory and practice*, B. Charron-Bost, F. Pedone and A. Schiper, eds., Spring, 2009.
3. F. Pedone and A. Schiper. From object replication to database replication. In *Replication: theory and practice*, B. Charron-Bost, F. Pedone and A. Schiper, eds., Spring, 2009.
4. M. Allani, B. Garbinato and F. Pedone. Application Layer Multicast. In *Middleware for Network Eccentric and Mobile Applications*, B. Garbinato, H. Miranda and L. Rodrigues, eds., Springer, 2009.
5. F. Pedone. Replication based on Group Communication. In *Encyclopedia of Database Systems*, M. T. Ozsu and L. Liu, eds., Springer, 2009.

D.2 Articles in Journals (Peer Reviewed)

6. F. Pedone and N. Schiper. Byzantine Fault-Tolerant Deferred Update Replication. In the *Journal of the Brazilian Computer Society*, 2012.
7. M. Allani, B. Garbinato and F. Pedone. Resource-Aware Multimedia Content Delivery: A Gambling Approach. In the *Computer Journal*, Vol. 53, No. 2, pp. 234–248, May 2010.
8. L. Camargos, R. Schmidt, E. Madeira and F. Pedone. Multicoordinated Agreement for Groups of Agents. In the *Journal of the Brazilian Computer Society*, Vol. 16, No. 1, pp. 49–68, May 2010.
9. F. Pedone and S. Frolund. Pronto: High availability for standard off-the-shelf databases. In the *Journal of Parallel and Distributed Computing*, Vol. 68, No. 2, pp. 150–164, February 2008.
10. S. Frolund and F. Pedone. Dealing Efficiently with Data Center Disasters. In the *Journal of Parallel and Distributed Computing*, Vol. 63, No. 11, pp. 1064–1081, November 2003.
11. B. Kemme, F. Pedone, G. Alonso, A. Schiper and M. Wiesmann. Using Optimistic Atomic Broadcast in Transaction Processing Systems. In *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, Vol. 15, No. 4, pp. 1018–1032, July/August 2003.
12. F. Pedone, A. Schiper and R. Guerraoui. The Database State Machine Approach. In *Distributed and Parallel Databases*, Vol. 14, No. 1, pp. 71–98, July 2003.
13. F. Pedone and A. Schiper. Optimistic Atomic Broadcast: A Pragmatic Viewpoint. In *Theoretical Computer Science*, Vol. 291, pp. 79–101, January 2003.
14. F. Pedone and A. Schiper. Handling Message Semantics with Generic Broadcast Protocols. In *Distributed Computing*, Vol. 15, No. 2, pp. 97–107, April 2002.
15. F. Pedone. Boosting System Performance with Optimistic Distributed Protocols. In *IEEE Computer*, Vol. 34, No. 12, pp. 80–86, December 2001.

D.3 Articles in Conferences and Workshops (Peer Reviewed)

16. S. Benz, P. J. Marandi, F. Pedone and B. Garbinato. Building global and scalable systems with Atomic Multicast In *Proc. of the 15th International Middleware Conference (Middleware 2014)*. Bordeaux, France, December 2014.
17. P. J. Marandi and F. Pedone. Optimistic Parallel State-Machine Replication In *Proc. of the 33rd International Symposium on Reliable Distributed Systems (SRDS 2014)*. Nara, Japan, October 2014.
18. P. J. Marandi, S. Benz, F. Pedone and K. Birman. The Performance of Paxos in the Cloud In *Proc. of the 33rd International Symposium on Reliable Distributed Systems (SRDS 2014)*. Nara, Japan, October 2014.
19. A. Malekpour, A. Carzaniga and F. Pedone. End-to-End Congestion Control for Content-Based Networks In *Proc. of the 33rd International Symposium on Reliable Distributed Systems (SRDS 2014)*. Nara, Japan, October 2014.
20. L. Pacheco, D. Sciascia and F. Pedone. Parallel Deferred Update Replication In *Proc. of the 13th IEEE International Symposium on Network Computing and Applications (NCA 2014)*. Boston, USA, August 2014.
21. C. E. Bezerra, F. Pedone and R. van Renesse. Scalable State-Machine Replication. In *Proc. of the 44th International Conference on Dependable Systems and Networks (DSN 2014)*. Atlanta, USA, June 2014.
22. J. Du, D. Sciascia, S. Elnikety, W. Zwaenepoel and F. Pedone. Clock-RSM: Low-Latency Inter-Datacenter State Machine Replication Using Loosely Synchronized Physical Clocks. In *Proc. of the 44th International Conference on Dependable Systems and Networks (DSN 2014)*. Atlanta, USA, June 2014.
23. N. Schiper, F. Pedone and R. van Renesse. The Energy Efficiency of Database Replication Protocols. In *Proc. of the 44th International Conference on Dependable Systems and Networks (DSN 2014)*. Atlanta, USA, June 2014.
24. P. Marandi, C. E. Bezerra and F. Pedone. Rethinking State-Machine Replication for Parallelism. In *Proc. of the 34th International Conference on Distributed Computing Systems (ICDCS 2014)*. Madrid, Spain, June 2014.
25. R. Schmidt, L. Camargos and F. Pedone. Collision-fast Atomic Broadcast. In *Proc. of the 28th IEEE International Conference on Advanced Information Networking and Applications (AINA 2014)*. Victoria, Canada, May 2014.
26. C. E. Bezerra, F. Pedone, B. Garbinato and C. Geyer. Optimistic Atomic Multicast In *33rd International Conference on Distributed Computing Systems (ICDCS 2013)*. Philadelphia, USA, July 2013.
27. D. Sciascia and F. Pedone. Geo-replicated storage with scalable deferred update replication In *43rd International Conference on Dependable Systems and Networks (DSN 2013)*. Budapest, Hungary, June 2013.
28. R. Padilha and F. Pedone. Augustus: Scalable and Robust Storage for Cloud Applications In *Proc. of the 8th European Conference on Systems (EuroSys 2013)*. Prague, Czech Republic, April 2013.
29. A. Tomic, D. Sciascia and F. Pedone. MoSQL: An Elastic Storage Engine for MySQL In *28th ACM Symposium on Applied Computing, DADS Track (SAC 2013)*. Coimbra, Portugal, March 2013.
30. S. Ataei, B. Garbinato and F. Pedone. ReStream: A Replication Algorithm for Reliable and Scalable Multimedia Streaming In *21st Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP 2013)*. Belfast, Ireland, February 2013.
31. D. Sciascia and F. Pedone. RAM-DUR: In-Memory Deferred Update Replication. In *31st IEEE International Symposium on Reliable Distributed Systems (SRDS 2012)*. Irvine, USA, October 2012.
32. D. Sciascia, F. Pedone and F. Junqueira. Scalable Deferred Update Replication. In *42th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2012)*. Boston, USA, June 2012.

33. P. Marandi, M. Primi and F. Pedone. Multi-Ring Paxos. In *42th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2012)*. Boston, USA, June 2012.
34. P. Raykov, N. Schiper and F. Pedone. Byzantine Fault-Tolerance with Commutative Commands. In *15th International Conference On Principles Of Distributed Systems (OPODIS 2011)*. Toulouse, France, December 2011. *Acceptance Rate: 39%*.
35. R. Padilha and F. Pedone. Belisarius: BFT storage with confidentiality. In *Proc. of the 10th IEEE International Symposium on Network Computing and Applications (NCA 2011)*. Cambridge, USA, August 2011. *Acceptance Rate: 26%*.
36. A. Malekpour, A. Carzaniga, G. T. Carughi and F. Pedone. Probabilistic FIFO Ordering In Publish/Subscribe Networks. In *Proc. of the 10th IEEE International Symposium on Network Computing and Applications (NCA 2011)*. Cambridge, USA, August 2011. *Acceptance Rate: 26%*.
37. S. Ataei, B. Garbinato, M. Allani and F. Pedone. ScaleStream An Adaptive Replication Algorithm for Scalable Multimedia Streaming. In *Proc. of the 10th IEEE International Symposium on Network Computing and Applications (NCA 2011)*. Cambridge, USA, August 2011. *Acceptance Rate: 60% (short paper)*.
38. A. Malekpour, A. Carzaniga, F. Pedone and G. T. Carughi. End-to-End Reliability for Best-Effort Content-Based Publish/Subscribe Networks. In *Proc. of the 5th ACM International Conference on Distributed Event-Based Systems (DEBS 2011)*. New York, USA, July 2011. *Acceptance Rate: not available*.
39. R. Padilha and F. Pedone. Scalable Byzantine Fault-Tolerant Storage. In *Proc. of the 7th Workshop on Hot Topics in System Dependability (HotDep 2011)*. Hong Kong, China, June 2011. *Acceptance Rate: not available*.
40. P. J. Marandi, M. Primi and F. Pedone. High Performance State-Machine Replication. In *Proc. of the 41th International Conference on Dependable Systems and Networks (DSN 2011)*. Hong Kong, China, June 2011. *Acceptance Rate: 25%*.
41. F. Pedone, N. Schiper and J. E. Armendariz-Inigo. Byzantine Fault-Tolerant Deferred Update Replication. In *Proc. of the 5th Latin-American Symposium on Dependable Computing (LADC 2011)*. Sao Jose dos Campos, Brazil, April 2011. *Acceptance Rate: 39%*.
42. L. Camargos, F. Pedone, A. Pilchin and M. Wieloch. On-Demand Recovery in Middleware Storage Systems. In *Proc. of the 29th International Symposium on Reliable Distributed Systems (SRDS 2010)*. New Delhi, India, October 2010. *Acceptance Rate: 22%*.
43. N. Schiper, P. Sutra and F. Pedone. P-Store: Genuine Partial Replication in Wide Area Networks. In *Proc. of the 29th International Symposium on Reliable Distributed Systems (SRDS 2010)*. New Delhi, India, October 2010. *Acceptance Rate: 22%*.
44. P. J. Marandi, M. Primi, N. Schiper and F. Pedone. Ring-Paxos: A High Throughput Atomic Broadcast Protocol. In *Proc. of the 40th International Conference on Dependable Systems and Networks (DSN 2010)*. Chicago, USA, June 2010. *Acceptance Rate: 25%*.
45. N. Schiper and F. Pedone. Fast, Flexible, and Highly Resilient Genuine Fifo and Causal Multicast Algorithms. In *Proc. of the 25th Symposium on Applied Computing (SAC 2010)*. Sierre, Switzerland, March 2010. *Acceptance Rate: 30%*.
46. M. Allani, B. Garbinato, A. Malekpour and F. Pedone. Reliable Communication Infrastructure for Adaptive Data Replication. In *Proc. of the 11th International Symposium on Distributed Objects, Middleware, and Applications (DOA 2009)*. Vilamoura, Portugal, November 2009. *Acceptance Rate: 57%*.

47. N. Schiper, P. Sutra and F. Pedone. Genuine versus Non-Genuine Atomic Multicast Protocols for Wide Area Networks: An Empirical Study. In *Proc. of the 28th International Symposium on Reliable Distributed Systems (SRDS 2009)*. New York, USA, September 2009. *Acceptance Rate: 22%*.
48. A. Malekpour, F. Pedone, M. Allani and B. Garbinato. Streamline: An Architecture for Overlay Multicast. In *Proc. of the 8th IEEE International Symposium on Network Computing and Applications (NCA 2009)*. Cambridge, USA, July 2009. *Acceptance Rate: not available*.
49. M. Allani, B. Garbinato, A. Malekpour and F. Pedone. QuoCast: A Resource-Aware Algorithm for Reliable Peer-to-Peer Multicast. In *Proc. of the 8th IEEE International Symposium on Network Computing and Applications (NCA 2009)*. Cambridge, USA, July 2009. *Acceptance Rate: not available*.
50. N. Schiper and F. Pedone. Solving Atomic Multicast when Groups Crash. In *Proc. of the 12th International Conference on Principles of Distributed Systems (OPODIS 2008)*. Luxor, Egypt, December 2008. *Acceptance Rate: 29%*.
51. V. Zuikevičiūtė and F. Pedone. Correctness Criteria for Database Replication: Theoretical and Practical Aspects. In *Proc. of the 10th International Symposium on Distributed Objects, Middleware, and Applications (DOA 2008)*. Monterrey, Mexico, November 2008. *Acceptance Rate: 27%*.
52. J. M. Bernabé-Gisbert, F. D. Muñoz-Escóí, V. Zuikevičiūtė and F. Pedone. A Probabilistic Analysis of Snapshot Isolation with Partial Replication. In *Proc. of the 27th International Symposium on Reliable Distributed Systems (SRDS 2008)*. Napoli, Italy, October 2008. *Acceptance Rate: 25%*.
53. L. Camargos, F. Pedone and M. Wieloch. A Highly Available Log Service for Transaction Termination. In *Proc. of the 7th International Symposium on Parallel and Distributed Computing (ISPDC 2008)*. Krakow, Poland, July 2008. *Acceptance Rate: 62%*.
54. L. Camargos, R. Schmidt and F. Pedone. Multicoordinated Agreement Protocols for Higher Availability. In *Proc. of the 7th IEEE International Symposium on Network Computing and Applications (NCA 2008)*. Cambridge, USA, July 2008. *Acceptance Rate: 35%*.
55. V. Zuikevičiūtė and F. Pedone. Conflict-Aware Load-Balancing Techniques for Database Replication. In *Proc. of the 23rd ACM Symposium on Applied Computing (ACM SAC 2008)*. Fortaleza, Brazil, March 2008. *Acceptance Rate: 28%*.
56. N. Schiper and F. Pedone. Optimal Atomic Broadcast and Multicast Algorithms for Wide Area Networks. In *Proc. of the 9th International Conference on Distributed Computing and Networking (ICDCN 2008)*. Kolkata, India, January 2008. *Acceptance Rate: 16%*.
57. R. Schmidt and F. Pedone. A Formal Analysis of the Deferred Update Technique. In *Proc. of the 11th International Conference On Principles Of Distributed Systems (OPODIS 2007)*. Guadeloupe, French West Indies, December 2007. *Acceptance Rate: not available*.
58. M. Allani, B. Garbinato, F. Pedone and M. Stamenkovic. A Gambling Approach to Scalable Resource-Aware Streaming. In *Proc. of the 26th International Symposium on Reliable Distributed Systems (SRDS 2007)*. Beijing, China, October 2007. *Acceptance Rate: 15%*.
59. R. Schmidt and F. Pedone. A Formal Analysis of the Deferred Update Technique, Brief announcement. In *Proc. of the 21st International Symposium on Distributed Computing (DISC 2007)*. Lemesos, Cyprus, September 2007. *Acceptance Rate: not available*.
60. N. Schiper and F. Pedone. Optimal Atomic Broadcast and Multicast Algorithms for Wide Area Networks, Brief announcement. In *Proc. of the 26th Symposium on Principles of Distributed Computing (PODC 2007)*. Portland, USA, August 2007. *Acceptance Rate: not available*.

61. L. Camargos, R. Schmidt and F. Pedone. Multicoordinated Paxos, Brief Announcement. In *Proc. of the 26th Symposium on Principles of Distributed Computing (PODC 2007)*. Portland, USA, August 2007. *Acceptance Rate: not available*.
62. L. Camargos, F. Pedone, and M. Wieloch. High-Performance Transaction Processing in Sprint. In *Proc. of the 2nd European Conference on Systems (EuroSys 2007)*. Lisbon Portugal, March 2007. *Acceptance Rate: 21%*.
63. N. Schiper, R. Schmidt, and F. Pedone. Optimistic Algorithms for Partial Database Replication. In *Proc. of the 10th International Conference On Principles Of Distributed Systems (OPODIS 2006)*. Saint-Emilion, France, December 2006. *Acceptance Rate: 13%*
64. J. Grov, L. Soares, J. Pereira, R. Oliveira, and F. Pedone. A Pragmatic Protocol for Database Replication in Interconnected Clusters. In *Proc. of the 12th IEEE International Symposium Pacific Rim Dependable Computing (PRDC 2006)*. Riverside, USA, 8 pages, December 2006. *Acceptance Rate: 35%*.
65. N. Schiper, R. Schmidt, and F. Pedone. Optimistic Algorithms for Partial Database Replication, Brief announcement. In *Proc. of the 20th International Symposium on Distributed Computing (DISC 2006)*. Stockholm, Sweden, pp. 557–559, September 2006. *Acceptance Rate: 50%*.
66. L. Camargos, E. Madeira, and F. Pedone. Optimal and Practical WAB-Based Consensus Algorithms. In *Proc. of the European Conference on Parallel Computing (EuroPar 2006)*, Dresden, Germany, pp. 353–544, August 2006. *Acceptance Rate: 38%*.
67. L. Camargos, F. Pedone, and R. Schmidt. A Low-Overhead Primary-Backup Protocol for In-Memory Database Replication. In *Proc. of the 5th IEEE International Symposium on Network Computing and Applications (NCA 2006)*, Cambridge, USA, 8 pages, July 2006. *Acceptance Rate: 35%*.
68. S. Elnikety, S. Dropsho, and F. Pedone. Tashkent: Uniting Durability with Transaction Ordering for High-Performance Scalable Database Replication. In *Proc. of the 1st European Conference on Systems (EuroSys 2006)*, Leuven, Belgium, pp. 117–130. April 2006. *Acceptance Rate: 21%*.
69. S. Elnikety, F. Pedone, and W. Zwaenepoel. Database Replication Using Generalized Snapshot Isolation. In *24th IEEE Symposium on Reliable Distributed Systems (SRDS 2005)*, Orlando, USA, pp. 73–84, October 2005. *Acceptance Rate: 29%*.
70. R. Schmidt and F. Pedone. Consistent Main-Memory Database Federations under Deferred Disk Writes. In *24th IEEE Symposium on Reliable Distributed Systems (SRDS 2005)*, Orlando, USA, pp. 85–94, October 2005. *Acceptance Rate: 29%*.
71. V. Zuikeviciute and F. Pedone. Revisiting the Database State Machine Approach. In *VLDB Workshop on Design, Implementation, and Deployment of Database Replication*, Trondheim, Norway, pp. 1–8, August 2005. *Acceptance Rate: 71%*.
72. R. Schmidt, I. C. Garcia, F. Pedone, and L. E. Buzato. Optimal Asynchronous Garbage Collection for Checkpointing Protocols with Rollback-Dependency Trackability. In *International Conference on Distributed Computing Systems (ICDCS 05)*, Columbus, USA, pp. 167–176, June 2005. *Acceptance Rate: 13.9%*.
73. B. Garbinato, F. Pedone, and R. Schmidt. Adaptive Algorithms for Efficient Message Diffusion in Unreliable Environments. In *International Conference on Dependable Systems and Networks (DSN 2004)*, Florence, Italy, pp. 507–516, June 2004. *Acceptance Rate: 22.8%*.
74. R. Schmidt, I. C. Garcia, F. Pedone, and L. E. Buzato. Optimal Asynchronous Garbage Collection for Checkpointing Protocols with Rollback-Dependency Trackability (Brief Announcement). In *Symposium on Principles of Distributed Computing (PODC 2004)*, St. John’s, Canada, pp. 392, July 2004. *Acceptance Rate: 24%*.

75. F. Pedone and A. Schiper. Lower Bounds on Generic Broadcast Algorithms (Brief Announcement). In *Symposium on Principles of Distributed Computing (PODC 2004)*, St. John's, Canada, pp. 402, July 2004. *Acceptance Rate: 24%*.
76. T. Damas, N. Duarte, M. Goulart, I. Jansch-Porto, and F. Pedone. Performance Aspects of a Probabilistic Resource Location Algorithm. In *Brazilian Symposium on Computer Networks (SBRC 2004)*, Gramado, Brazil, 13 pages, May 2004. *Acceptance Rate: not available*.
77. S. Frølund, V. Kalogeraki, F. Pedone and J. Pruyne Scalable State Replication with Weak Consistency. In *International Workshop on Challenges of Large Applications in Distributed Environments (CLADE)*, Seattle, pp. 96–105, June 2003. *Acceptance Rate: not available*.
78. S. Frølund and F. Pedone. Ruminations on Domain-Based Reliable Broadcast. In *Proc. of 16th International Symposium on Distributed Computing (DISC'2002)*, Toulouse, France, pp. 148–162, October 2002. *Acceptance Rate: 32%*.
79. P. Felber and F. Pedone. Probabilistic Atomic Broadcast. In *Proc. of the 21th IEEE Symposium on Reliable Distributed Systems (SRDS'2002)*, Suita, Japan, pp. 170–179, October 2002. *Acceptance Rate: not available*.
80. F. Pedone, N. Duarte and M. Goulart. Probabilistic Queries in Large-Scale Networks. In *Proc. of the 4th European Dependable Computing Conference (EDCC)*, Toulouse, France, pp. 209–226, October 2002. *Acceptance Rate: 31%*.
81. F. Pedone, A. Schiper, P. Urban and D. Cavin. Solving Agreement Problems with Weak Ordering Oracles. In *Proc. of the 4th European Dependable Computing Conference (EDCC)*, Toulouse, France, pp. 44–61, October 2002. *Acceptance Rate: 31%*.
82. F. Pedone. Optimistic Validation of Electronic Tickets. In *Proc. of the 20th IEEE Symposium on Reliable Distributed Systems (SRDS 2001)*, New Orleans, USA, pp. 46–55, October 2001. *Acceptance Rate: 32%*.
83. S. Frølund and F. Pedone. Continental Pronto. In *Proc. of the 20th IEEE Symposium on Reliable Distributed Systems (SRDS 2001)*, New Orleans, USA, pp. 110–119, October 2001. *Acceptance Rate: 32%*.
84. A. Sousa, F. Pedone, R. Oliveira, and F. Moura. Partial Replication in the Database State Machine. In *Proc. of the 1st IEEE International Symposium on Network Computing and Applications (NCA 2001)*, Cambridge, USA, pp. 298–309, October 2001. *Acceptance Rate: not available*.
85. S. Frølund, F. Pedone, and J. Pruyne. Web e-Transactions. In *Proc. of the 2nd International Conference on Internet Computing (IC 2001)*, Las Vegas, USA, 9 pages, June 2001. *Acceptance Rate: not available*.
86. F. Pedone and S. Frølund. Pronto: a fast failover protocol for off-the-shelf commercial databases. In *Proc. of the 19th IEEE Symposium on Reliable Distributed Systems (SRDS 2000)*, Nurnberg, Germany, pp. 176–185, October 2000. *Acceptance Rate: 28%*.
87. M. Wiesmann, F. Pedone, A. Schiper, B. Kemme, and G. Alonso. Database replication techniques: a three parameter classification. In *Proc. of the 19th IEEE Symposium on Reliable Distributed Systems (SRDS 2000)*, Nurnberg, Germany, pp. 206–215, October 2000. *Acceptance Rate: 28%*.
88. F. Pedone, A. Schiper, and A. van Moorsel. Bridging the Gap between Application Semantics and Group Communication Protocols. In *Proc. of the International SRDS Workshop on Dependable System Middleware and Group Communication (DSMGC 2000)*, Nurnberg, Germany, 6 pages, October 2000. *Acceptance Rate: not available*.
89. S. Frølund, F. Pedone, J. Pruyne, and A. van Moorsel. Building Dependable Internet Services with E-speak. In *Proc. of the Workshop on Dependability of IP Applications, Platforms, and Networks, held in conjunction with the 30th Int. Conference on Dependable Systems and Networks (FTCS-30)*, New York, USA, 6 pages, June 2000. *Acceptance Rate: not available*.

90. M. Wiesmann, F. Pedone, A. Schiper, B. Kemme, and G. Alonso. Understanding replication in databases and distributed systems. In *Proc. of the 20th IEEE International Conference on Distributed Computing Systems (ICDCS 2000)*, Taipei, Taiwan, pp. 464–474, April 2000. *Acceptance Rate: 40%*.
91. F. Pedone and A. Schiper. Generic Broadcast. In *Proc. of 13th International Symposium on Distributed Computing (DISC 1999) (formerly WDAG)*, Bratislava, Slovak Republic, pp. 94–108, September 1999. *Acceptance Rate: 38%*.
92. B. Kemme, F. Pedone, G. Alonso, and A. Schiper. Processing Transactions over Optimistic Atomic Broadcast Protocols. In *Proc. of the 19th IEEE International Conference on Distributed Computing Systems (ICDCS 1999)*, Austin, USA, pp. 424–431, May 1999. *Acceptance Rate: not available*.
93. M. Wiesmann, F. Pedone, and A. Schiper. A Systematic Classification of Replicated Database Protocols based on Atomic Broadcast. In *Proc. of the 3rd European Research Seminar on Advances in Distributed Systems (ERSADS 1999)*, Madeira, Portugal, 8 pages, April 1999. *Acceptance Rate: not available*.
94. F. Pedone and A. Schiper. Optimistic Atomic Broadcast. In *Proc. of 12th International Symposium on Distributed Computing (DISC 1998) (formerly WDAG)*, Andros, Greece, pp. 318–332, September 1998. *Acceptance Rate: 32%*.
95. F. Pedone, R. Guerraoui, and A. Schiper. Exploiting Atomic Broadcast in Replicated Databases. In *Proc. of EuroPar (EuroPar 1998)*, Southampton, England, pp. 513–520, September 1998. *Acceptance Rate: 54%*.
96. F. Pedone and R. Guerraoui. On Transaction Liveness in Replicated Databases. In *Proc. of IEEE Pacific Rim International Symposium on Fault-Tolerant Systems (PRFTS 1997)*, Taipei, Taiwan, pp. 104–109, December 1997. *Acceptance Rate: 56%*.
97. F. Pedone, R. Guerraoui, and A. Schiper. Transaction Reordering in Replicated Databases. In *Proc. of 16th IEEE Symposium on Reliable Distributed Systems (SRDS 1997)*, Durham, USA, pp. 175–182, October 1997. *Acceptance Rate: not available*.
98. F. Pedone. A Closer Look at Optimistic Replica Control. In *Proc. of the 2nd European Research Seminar on Advances in Distributed Systems (ERSADS 1997)*, Zinal, Switzerland, pp. 273–278, March 1997. *Acceptance Rate: 80%*.
99. F. Pedone, M. Barcellos, and C. Geyer. A Multiversion Replicated File System. In *Proc. of Latin American CLEI Conference (CLEI 1994)*, Mexico City, Mexico, 11 pages, September 1994. (Paper in Portuguese.) *Acceptance Rate: not available*.

D.4 Theses

1. The Database State Machine and Group Communication Issues. PhD thesis, École Polytechnique Fédérale de Lausanne, Switzerland, 1999.
2. A Multiversion File Server. MSc thesis, Federal University of Rio Grande do Sul (UFRGS), Brazil, 1995.

D.6 Patents

1. *Fast failover database tier in a multi-tier transaction processing system*, with S. Frolund.
US Patent Number 6,772,363.
2. *Method to invoke wide-area objects in distributed computer systems*, with S. Frolund.
US Patent Number 6,859,887.
3. *Distributed data center system protocol for continuity of service in the event of disaster failures*, with S. Frolund.
US Patent Number 6,928,580.
4. *Distributed system with an efficient atomic broadcast mechanism*, with A. Schiper and P. Urban.
US Patent Number 7,039,719.
5. *Method and system for performing fault-tolerant online validation of service requests*.
US Patent Number 7,051,065.
6. *E-ticket validation protocol*.
US Patent Number 7,231,368.

E Research Grants¹

1. Principal Investigator for *Scalable Dependability*, Science Without Borders, Special Visiting Researcher Fellowship (2014–2017, \$50.000 CHF), with F. Dotti and J. Fraga.
2. Principal Investigator for *Feasibility study: MoSQL Storage Engine*, Commission pour la technology et l'innovation CTI (2014–2015, \$114.912 CHF).
3. Principal Investigator for *GeoGraph: Efficient Geographically Distributed Graph Infrastructure*, Microsoft Research Grant, (2014–2017, \$121.000 CHF).
4. Principal Investigator for *Cosmmus: an infrastructure for massively multiplayer online games*, Swiss National Science Foundation (2013–2016, \$176.000 CHF).
5. Principal Investigator for *Streamline 2: An Architecture for Application-Level Data Networking*, Swiss National Science Foundation (2013–2016, \$163.000 CHF), with B. Garbinato.
6. Principal Investigator for *RS³: Robust and Scalable Storage Systems*, Hasler Foundation, Switzerland (2012–2013, \$73.000 CHF).
7. Co-Principal Investigator for *Trustworthy Cloud Storage*, Sinergia project, Swiss National Science Foundation (2012–2015, \$167.000 CHF), with A. Ailamaki et al.
8. Principal Investigator for *Swift-WAN2: Performance and Dependability for data center applications*, Swiss National Science Foundation (2011–2012, \$102.812 CHF).
9. Principal Investigator for *Spin Fund Bmob*, Swiss National Science Foundation, NCCR MICS (2010–2011, \$120.000 CHF)
10. Co-Principal Investigator for *The Datacenter Observatory*, Swiss National Science Foundation (2011, \$300.000 CHF), with W. Zwaenepoel et al. Funding shared by EPFL and ETH to acquire hardware.

¹Unless mentioned otherwise, the amount showed is my share of the funding.

11. Principal Investigator for *Streamline: An Architecture for Application-Level Data Streaming*, Swiss National Science Foundation (2009–2012, \$150.000 CHF), with B. Garbinato.
12. Principal Investigator for *Swift-WAN: System support for distributed dynamic content Web services*, Swiss National Science Foundation (2009–2011, \$95.770 CHF), with W. Zwaenepoel.
13. Principal Investigator for *Swift-WAN: System support for distributed dynamic content Web services*, Hasler Foundation, Switzerland (2009–2012, \$295.740 CHF), with W. Zwaenepoel.
14. Co-Principal Investigator for *Colloc 2: Local Replication Strategies for Global Content Management in Large-Scale Distributed Systems*, Swiss National Science Foundation (2008–2009, \$53.900 CHF), with B. Garbinato.
15. Principal Investigator for *Automatic Reconfiguration of High Performance Data Management Systems*, Hasler Foundation, Switzerland (2007, \$100.000 CHF).
16. Principal Investigator for *Automatic Reconfiguration of High Performance Data Management Systems*, Swiss National Science Foundation (2007–2008, \$81.050 CHF).
17. Co-Principal Investigator for *Database Systems: Concepts, Design and Architecture*, Swiss Virtual Campus (2006–2007, \$15.000 CHF).
18. Co-Principal Investigator for *System support for Distributed Dynamic-Content Web Servers*, Swiss National Science Foundation (2005–2008, \$127.424 CHF), with W. Zwaenepoel.
19. Co-investigator for *Colloc: A Replication Engine for Peer-to-Peer Content Management in Large-Scale Distributed Systems*, Swiss National Science Foundation (2005–2008, \$54.000 CHF), with B. Garbinato.
20. Principal investigator for *Data Dissemination in Mobile Ad Hoc Sensor Environments*, Swiss National Science Foundation, NCCR MICS (2005–2009, \$207.000 CHF), with A. Murphy.
21. Principal investigator for *Adaptive Data Management for Large Database Clusters*, Swiss National Science Foundation (2004–2006, \$81.000 CHF).
22. Co-investigator for *Toward Reliable and Efficient Internet Large-Scale Systems: Design, implementation, and verification*, Swiss National Science Foundation (2004, \$30.400 CHF), with T. Katayama.
23. Principal investigator for *Adaptive Data Management for Large Database Clusters*, Hasler Foundation, Switzerland (2004–2007, \$99.298 CHF).
24. Co-investigator for *GORDA—Open Replication of Databases*, European Union STREP project (2004–2007, \$295.000 CHF, from a total budget of 1.848.000 CHF), with University of Minho (Portugal), University of Lisbon (Portugal), INRIA (France), Emic Networks (Finland) and MySQL (Sweden).
25. Principal investigator for *Mac OS X Lab, high-performance computing, Apple* (2005–2006, \$40.000 CHF).

E Teaching Experience

- Parallel and Distributed Computing, University of Lugano, 2012.
- Distributed Systems, graduate course, University of Lugano, 2011–2009.
- Distributed Algorithms, graduate course, University of Lugano, 2014–2008.
- Computer Systems, graduate course, University of Lugano, 2009, 2008, 2006.
- Operating Systems, undergraduate course, University of Lugano, 2014, 2013, 2007.
- Discrete Structures, undergraduate course, University of Lugano, 2007–2004.
- Algorithms and Data Structures, undergraduate course, University of Lugano, 2005.
- Computer Networks, undergraduate course, EPFL, 2003, 2004.

F Advising Experience

F.1 Graduated PhD Students

- A. Malekpour, *A Transport Protocol for Best-Effort Content-Based Networks*, University of Lugano, 2012. Co-supervision with A. Carzaniga (USI). Currently Software Engineer at Bloomberg, Switzerland.
- R. Rebiha, *Algebraic Formal Methods for Invariant Generation*, University of Lugano, 2011. Co-supervision with A. V. Moura (Unicamp). Currently Post-doc at Unicamp, Brazil.
- N. Schiper, *On Multicast Primitives in Large Networks and Partial Replication Protocols*, University of Lugano, 2009. Currently Post-doc at Cornell University, USA.
- V. Narvaez, *On Non-Intrusive Workload-Aware Database Replication*, University of Lugano, 2009. Currently IT Manager at Pure & Co., Thailand.
- L. Camargos, *Multicoordinated Agreement Protocols and the Log Service*, University of Lugano, 2008. Co-supervision with E. Madeira (Unicamp). Currently Assistant professor at Federal University of Uberlandia, Brazil.
- R. Schmidt, *Deferred-Update Database Replication: Theory and Algorithms*, EPFL, 2008. Co-supervision with W. Zwaenepoel (EPFL). Currently Software Engineer at Facebook, USA.

F.2 Graduated Master Students

- A. Tomic, *MoSQL: A Relational Database Using NoSQL Technology*, University of Lugano, 2011. Currently PhD student at USI, Switzerland.
- P. Raykov, *Byzantine Generic Broadcast*, University of Lugano, 2010. Currently PhD student at ETH, Switzerland.
- D. Sciascia, *dsmDB: Clustering in-memory Database Management Systems*, University of Lugano, 2009. Currently PhD student at USI, Switzerland.
- M. Primi, *Paxos made code: Implementing a high throughput Atomic Broadcast*, University of Lugano, 2009. Currently Software Engineer at Apple, USA.

F.3 Thesis Committees

- PhD committee member of A. Malekpour, “A Transport Protocol for Best-Effort Content-Based Networks,” USI, 2012.
- PhD committee member of S. Gerani, “Proximity-based Approaches to Blog Opinion Retrieval,” USI, 2011.
- PhD committee member of N. Santos, “State Machine Replication: From analytical evaluation to high performance Paxos,” EPFL, 2012.
- PhD committee member of A. Tsitovich, “Scalable Abstractions for Efficient Security Checks,” USI, 2011.
- PhD committee member of R. Rebiha, “Algebraic Formal Methods for Invariant Generation,” USI, 2011.
- PhD committee member of C. Hall, “Peer-to-Peer Algorithms for Sampling Generic Topologies,” USI, 2010.
- PhD committee member of M. Gagliolo, “Online Dynamic Algorithm Portfolios: Minimizing the Computational Cost of Problem Solving,” USI, Switzerland, 2010.
- PhD committee member of A. Correia, “Practical Database Replication,” Universidade do Minho, Portugal, 2010.
- PhD committee member of P. Sutra, “Efficient Protocols for Generalized Consensus and Partial Replication,” Université Pierre et Marie Curie, Paris 6, France, 2010.
- PhD committee member of G. Vieira, “Uma Arquitetura de Software para Replicação Baseada em Consenso,” Universidade Estadual de Campinas (Unicamp), 2010.
- PhD committee member of N. Schiper, “On Multicast Primitives in Large Networks and Partial Replication Protocols,” USI, 2009.
- PhD committee member of M. Allani, “Tree-based message diffusion for managing replicated data in unreliable and resource-constrained peer-to-peer environment,” University of Lausanne, Switzerland, 2009.
- PhD committee member of V. Zuikeviciute, “On Non-Intrusive Workload-Aware Database Replication,” USI, 2009.
- PhD committee member of A. Forster, “Teaching Networks How to Learn,” USI, 2009.
- PhD committee member of R. de Juan-Marín. “Crash Recovery with Partial Amnesia Failure Model Issues,” Universitat Politècnica de València, Spain, 2008.
- PhD committee member of L. Camargos, “Multicoordinated Agreement Protocols and the Log Service,” USI, 2008.
- PhD committee member of S. Legg, “Machine Super Intelligence,” USI, 2008.
- PhD committee member of S. Bianchi, “Load-balanced Structures for Decentralized Overlays,” University of Neuchatel, Switzerland, 2008.
- PhD committee member of R. Schmidt, “Deferred-Update Database Replication: Theory and Algorithms,” EPFL, 2008.
- PhD committee member of S. Elnikety, “Transparent Scalable Database Replication,” EPFL, 2007.
- PhD committee member of A. de Sousa, “Partial Replication in the Database State Machine,” Universidade do Minho, Portugal, 2007.
- PhD committee member of R. Levy, “The Complexity of Reliable Distributed Storage,” EPFL, 2007.
- PhD committee member of F. Tronel, “Application des problèmes d’accord à la tolérance aux défaillances dans les systèmes distribués asynchrones,” Université de Rennes 1 (IRISA), France, 2003.

G Scientific Community Activities

G.1 Program committee chairmanships

- Co-chair of the “IEEE Symposium on Reliable Distributed Systems SRDS 2011,” Madrid, Spain, October 2011.
- Co-chair of the “30 Years of Replication,” Monte Verita Symposium, Ascona, Switzerland, November 2007.
- Co-chair of the “International Workshop on Large-Scale Group Communication,” held in conjunction with the IEEE Symposium on Reliable Distributed Systems SRDS 2003, Florence, Italy, October 2003.
- Co-chair of the “International Workshop on Self-Healing and Self-Managing Distributed Systems,” held in conjunction with the IEEE Symposium on Reliable Distributed Systems SRDS 2002, Suita, Japan, October 2002.
- Co-chair of the “IEEE Workshop on Resource Sharing in Massively Distributed Systems,” held in conjunction with the IEEE International Conference on Distributed Computing Systems ICDCS 2002, Vienna, Austria, July 2002.

G.2 Program committee memberships

Program committee member of the following selected conferences.

- European Conference on Systems Research (EuroSys 2015, 2014, 2010, 2009)
- IEEE International Conference on Dependable Systems and Networks (DSN 2015, 2014, 2011–2009)
- Dependable and Adaptive Distributed Systems, ACM Symposium on Applied Computing (DADS 2015–2006)
- IEEE International Symposium on Reliable Distributed Systems (SRDS 2014–2010)
- ACM/IFIP/USENIX International Middleware Conference (Middleware 2014)
- International Conference on Principles of Distributed Systems (OPODIS 2014)
- IEEE International Conference on Distributed Computing Systems (ICDCS 2014–2012, 2006, 2005)
- Brazilian Symposium on Computer Networks and Distributed Systems (SBRC 2014, 2012)
- Latin-American Symposium on Dependable Computing (LADC 2013, 2009, 2007, 2005)
- International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2013, 2008, 2006)
- European Dependable Computing Conference (EDCC 2012, 2008)
- IEEE International Symposium on Network Computing and Applications (NCA 2012, 2005)
- IEEE International Conference on Advanced Information Networking and Applications (AINA 2011, 2006)
- International Symposium on Distributed Objects, Middleware, and Applications (DOA 2009–2007)
- USENIX Symposium on Operating Systems Design and Implementation (OSDI 2008)
- IEEE International Conference on Parallel and Distributed Systems (ICPADS 2005)

Reviewer for the following selected journals: ACM TOCS, JPDC, IEEE TPDS, IEEE TDSC, IEEE TMC, IEEE Computer, Computer Journal, and IPL.