

PUBLICATIONS

CHRISTOPH M. KIRSCH

ck@cs.uni-salzburg.at
www.cs.uni-salzburg.at/~ck

CONFERENCE AND WORKSHOP PAPERS

- [1] C.M. Kirsch, M. Lippautz, and H. Payer. “Fast and Scalable, Lock-free k-FIFO Queues”. In: *Proc. International Conference on Parallel Computing Technologies (PaCT)*. LNCS. Springer, 2013. Click here for PDF file.
- [2] M. Aigner et al. “Analysis of Portfolio-Style Parallel SAT Solving on Current Multi-Core Architectures”. In: *Proc. Workshop on Pragmatics of SAT (PoS)*. EPiC. EasyChair, 2013. Click here for PDF file.
- [3] M. Aigner and C.M. Kirsch. “ACDC: Towards a Universal Mutator for Benchmarking Heap Management Systems”. In: *Proc. International Symposium on Memory Management (ISMM)*. ACM, 2013. Click here for PDF file.
- [4] E. Pereira et al. “Modeling and Controlling the Structure of Heterogeneous Mobile Robotic Systems: A BigActor Approach”. In: *International Systems Conference (SysCon)*. IEEE, 2013. Click here for PDF file.
- [5] E. Pereira et al. “BigActors - A Model for Structure-aware Computation”. In: *Proc. International Conference on Cyber-Physical Systems (ICCPs)*. ACM, 2013. Click here for PDF file.
- [6] T.A. Henzinger et al. “Quantitative Relaxation of Concurrent Data Structures”. In: *Proc. Symposium on Principles of Programming Languages (POPL)*. ACM, 2013. Click here for PDF file.
- [7] S.S. Craciunas and C.M. Kirsch. “The Power of Isolation”. In: *Proc. International Conference on Embedded and Ubiquitous Computing (EUC)*. IEEE, 2012. Click here for PDF file.
- [8] A. Haas et al. “How FIFO is Your Concurrent FIFO Queue?”. In: *Proc. OOPSLA Workshop on Relaxing Synchronization for Multicore and Manycore Scalability (RACES)*. 2012. Click here for PDF file.
- [9] C.M. Kirsch et al. “Performance, Scalability, and Semantics of Concurrent FIFO Queues”. In: *Proc. International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)*. LNCS. Springer, 2012. Click here for PDF file.
- [10] C.M. Kirsch and H. Payer. “Incorrect Systems: It’s not the Problem, It’s the Solution”. In: *Proc. Design Automation Conference (DAC)*. ACM, 2012. Click here for PDF file.
- [11] C.M. Kirsch et al. “Cyber-Physical Cloud Computing: The Binding and Migration Problem”. In: *Proc. International Conference on Design, Automation and Test in Europe (DATE)*. 2012. Click here for PDF file.
- [12] C.M. Kirsch, H. Payer, and H. Röck. “Hierarchical PLABs, CLABs, TLABs in Hotspot”. In: *Proc. International Conference on Systems (ICONS)*. 2012. Click here for PDF file.
- [13] H. Chen et al. “Cloud Computing on Wings: Applications to Air Quality”. In: *Proc. American Astronautical Society Guidance and Control Conference (AASGNC)*. AAS, 2012. Click here for PDF file.
- [14] C.M. Kirsch et al. “Runtime Programming through Model-Preserving, Scalable Runtime Patches”. In: *Proc. International Conference on Application of Concurrency to System Design (ACSD)*. IEEE, 2011, pp. 77–86. Click here for PDF file.
- [15] C.M. Kirsch et al. “Brief Announcement: Scalability versus Semantics of Concurrent FIFO Queues”. In: *Proc. Symposium on Principles of Distributed Computing (PODC)*. ACM, 2011, pp. 331–332. Click here for PDF file.
- [16] M. Aigner et al. “Short-term Memory for Self-collecting Mutators”. In: *Proc. International Symposium on Memory Management (ISMM)*. ACM, 2011. Click here for PDF file.
- [17] C.M. Kirsch et al. “Runtime Programming through Model-Preserving, Scalable Runtime Patches”. In: *Proc. International Workshop on Formal Aspects of Component Software (FACS), Doctoral Track*. Vol. 6921. LNCS. Springer, 2010, pp. 290–294. Click here for PDF file.

- [18] S.S. Craciunas, C.M. Kirsch, and A. Sokolova. “Power-aware Temporal Isolation with Variable-Bandwidth Servers”. In: *Proc. International Conference on Embedded Software (EMSOFT)*. ACM, 2010. Click here for PDF file.
- [19] S.S. Craciunas et al. “Information-Acquisition-as-a-Service for Cyber-Physical Cloud Computing”. In: *Proc. Workshop on Hot Topics in Cloud Computing (HotCloud)*. USENIX, 2010. Click here for PDF file.
- [20] S.S. Craciunas, C.M. Kirsch, and A. Sokolova. “Response Time versus Utilization in Scheduler Overhead Accounting”. In: *Proc. Real-Time and Embedded Technology and Applications Symposium (RTAS)*. IEEE, 2010. Click here for PDF file.
- [21] T.A. Henzinger et al. “Distributed, Modular HTL”. In: *Proc. Real-Time Systems Symposium (RTSS)*. IEEE, 2009. Click here for PDF file.
- [22] S.S. Craciunas, C.M. Kirsch, and A. Sokolova. “A Workload-oriented Programming Model for Temporal Isolation with VBS”. In: *Online Proc. Workshop on Reconciling Performance with Predictability (RePP)*. 2009. Click here for PDF file.
- [23] H. Röck et al. “Avoiding Unbounded Priority Inversion in Barrier Protocols Using Gang Priority Management”. In: *Proc. International Workshop on Java Technologies for Real-time and Embedded Systems (JTRES)*. ACM, 2009. Click here for PDF file.
- [24] S.S. Craciunas et al. “Programmable Temporal Isolation through Variable-Bandwidth Servers”. In: *Proc. Symposium on Industrial Embedded Systems (SIES)*. IEEE, 2009. Click here for PDF file.
- [25] K. Hedrick et al. “CSL: A Language to Specify and Re-Specify Mobile Sensor Network Behaviors”. In: *Proc. Real-Time and Embedded Technology and Applications Symposium (RTAS)*. IEEE, 2009. Click here for PDF file.
- [26] S.S. Craciunas et al. “Programmable Temporal Isolation in Real-Time and Embedded Execution Environments”. In: *Proc. Workshop on Isolation and Integration in Embedded Systems (IIES)*. ACM, 2009. Click here for PDF file.
- [27] H. Payer et al. “Combo Drive: Optimizing Cost and Performance in a Heterogeneous Storage Device”. In: *Proc. Workshop on Integrating Solid-state Memory into the Storage Hierarchy (WISH)*. 2009. Click here for PDF file.
- [28] S.S. Craciunas et al. “The JAviator: A High-Payload Quadrotor UAV with High-Level Programming Capabilities”. In: *Proc. AIAA Guidance, Navigation and Control Conference (GNC)*. 2008. Click here for PDF file.
- [29] S.S. Craciunas et al. “A Compacting Real-Time Memory Management System”. In: *Proc. USENIX Annual Technical Conference*. 2008. Click here for PDF file.
- [30] C.M. Kirsch, L. Lopes, and E.R.B. Marques. “Semantics-Preserving and Incremental Runtime Patching of Real-Time Programs”. In: *Proc. Workshop on Adaptive and Reconfigurable Embedded Systems (APRES)*. 2008. Click here for PDF file.
- [31] K. Chatterjee et al. “Logical Reliability of Interacting Real-Time Tasks”. In: *Proc. International Conference on Design, Automation and Test in Europe (DATE)*. 2008. Click here for PDF file.
- [32] C.M. Kirsch and R. Wilhelm. “Grand Challenges in Embedded Software”. In: *Proc. International Conference on Embedded Software (EMSOFT)*. ACM, 2007, pp. 2–6.
- [33] A. Ghosal et al. “Separate Compilation of Hierarchical Real-Time Programs into Linear-Bounded Embedded Machine Code”. In: *Online Proc. Workshop on Automatic Program Generation for Embedded Systems (APGES)*. 2007. Click here for PDF file.
- [34] J. Auerbach et al. “Java Takes Flight: Time-portable Real-time Programming with Exotasks”. In: *Proc. ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES)*. ACM, 2007. Click here for PDF file.
- [35] A. Ghosal et al. “A Hierarchical Coordination Language for Interacting Real-Time Tasks”. In: *Proc. International Conference on Embedded Software (EMSOFT)*. ACM, 2006. Click here for PDF file.
- [36] C.M. Kirsch, M.A.A. Sanvido, and T.A. Henzinger. “A Programmable Microkernel for Real-Time Systems”. In: *Proc. ACM/USENIX Conference on Virtual Execution Environments (VEE)*. ACM, 2005. Click here for PDF file.

- [37] T.A. Henzinger, C.M. Kirsch, and S. Matic. “Composable Code Generation for Distributed Giotto”. In: *Proc. ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES)*. ACM, 2005. Click here for PDF file.
- [38] C.M. Kirsch. “Threading by Appointment”. In: *Proc. Monterey Workshop*. CRC Press, 2004. Click here for PDF file.
- [39] T.A. Henzinger and C.M. Kirsch. “A Typed Assembly Language for Real-Time Programs”. In: *Proc. International Conference on Embedded Software (EMSOFT)*. ACM, 2004, pp. 104–113. Click here for PDF file.
- [40] A. Ghosal et al. “Event-driven Programming with Logical Execution Times”. In: *Proc. International Workshop on Hybrid Systems: Computation and Control (HSCC)*. Vol. 2993. LNCS. Springer, 2004, pp. 357–371. Click here for PDF file.
- [41] T.A. Henzinger, C.M. Kirsch, and S. Matic. “Schedule-Carrying Code”. In: *Proc. International Conference on Embedded Software (EMSOFT)*. Vol. 2855. LNCS. Springer, 2003, pp. 241–256. Click here for PDF file.
- [42] T.A. Henzinger and C.M. Kirsch. “The Embedded Machine: Predictable, Portable Real-Time Code”. In: *Proc. ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*. ACM, 2002, pp. 315–326. Click here for PDF file.
- [43] T.A. Henzinger et al. “Time Safety Checking for Embedded Programs”. In: *Proc. International Workshop on Embedded Software (EMSOFT)*. Vol. 2491. LNCS. Springer, 2002, pp. 76–92. Click here for PDF file.
- [44] C.M. Kirsch et al. “A Giotto-Based Helicopter Control System”. In: *Proc. International Workshop on Embedded Software (EMSOFT)*. Vol. 2491. LNCS. Springer, 2002, pp. 46–60. Click here for PDF file.
- [45] T.A. Henzinger, B. Horowitz, and C.M. Kirsch. “Giotto: A Time-triggered Language for Embedded Programming”. In: *Proc. International Workshop on Embedded Software (EMSOFT)*. Vol. 2211. LNCS. Springer, 2001, pp. 166–184. Click here for PDF file.
- [46] T.A. Henzinger, B. Horowitz, and C.M. Kirsch. “Embedded Control Systems Development with Giotto”. In: *Proc. ACM SIGPLAN Workshop on Languages, Compilers, and Tools for Embedded Systems (LCTES)*. ACM, 2001. Click here for PDF file.
- [47] T.B. Brown et al. “A Reusable and Platform-Independent Framework for Distributed Control Systems”. In: *Proc. Digital Avionics Systems Conference (DASC)*. IEEE, 2001. Click here for PDF file.
- [48] H. Ganzinger, C. Meyer, and M. Veanes. “The Two-Variable Guarded Fragment with Transitive Relations”. In: *Proc. Symposium on Logic in Computer Science (LICS)*. IEEE, 1999. Click here for PDF file.
- [49] H. Ganzinger et al. “A Resolution-Based Decision Procedure for Extensions of K4”. In: *Proc. Workshop on Advances in Modal Logic (AiML)*. Vol. 2. Lecture Notes. CSLI Publications, Stanford, CA, 1998. Click here for PDF file.
- [50] F. Jacquemard, C. Meyer, and C. Weidenbach. “Unification in Extensions of Shallow Equational Theories”. In: *Proc. International Conference on Rewriting Techniques and Applications (RTA)*. Vol. 1379. LNCS. Springer, 1998. Click here for PDF file.
- [51] H. Ganzinger, C. Meyer, and C. Weidenbach. “Soft Typing for Ordered Resolution”. In: *Proc. International Conference on Automated Deduction (CADE)*. Vol. 1249. LNCS. Springer, 1997. Click here for PDF file.
- [52] P. Graf and C. Meyer. “Advanced Indexing Operations on Substitution Trees”. In: *Proc. International Conference on Automated Deduction (CADE)*. Vol. 1104. LNCS. Springer, 1996. Click here for PDF file.

JOURNAL PAPERS

- [1] S.S. Craciunas et al. “Temporal Isolation in Real-Time Systems: The VBS Approach”. In: *Software Tools for Technology Transfer (STTT)* 15.3 (2013), pp. 189–209. Click here for PDF file.
- [2] A. Ghosal et al. “Separate Compilation of Hierarchical Real-Time Programs into Linear-bounded Embedded Machine Code”. In: *Science of Computer Programming* 77.2 (2012), pp. 96–112.
- [3] J. Auerbach et al. “Low-Latency Time-portable Real-time Programming with Exotasks”. In: *ACM Transactions on Embedded Computing Systems (TECS)* 8.2 (Jan. 2009), pp. 1–48. Click here for PDF file.

- [4] S.S. Craciunas, C.M. Kirsch, and H. Röck. “I/O Resource Management through System Call Scheduling”. In: *ACM Operating Systems Review (OSR), Special Issue on Research and Developments in the Linux Kernel* (July 2008). Click here for PDF file.
- [5] T.A. Henzinger and C.M. Kirsch. “The Embedded Machine: Predictable, Portable Real-Time Code”. In: *ACM Transactions on Programming Languages and Systems (TOPLAS)* 29.6 (Oct. 2007), pp. 33–61. Click here for PDF file.
- [6] T.A. Henzinger, B. Horowitz, and C.M. Kirsch. “Giotto: A Time-triggered Language for Embedded Programming”. In: *Proceedings of the IEEE* 91.1 (Jan. 2003), pp. 84–99. Click here for PDF file.
- [7] T.A. Henzinger et al. “From Control Models to Real-Time Code using Giotto”. In: *IEEE Control Systems Magazine (CSM)* 23.1 (Feb. 2003), pp. 50–64. Click here for PDF file.

INVITED PAPERS

- [1] A. Haas et al. “Distributed Queues in Shared Memory—Multicore Performance and Scalability through Quantitative Relaxation”. In: *Proc. International Conference on Computing Frontiers*. ACM, 2013. Click here for PDF file.
- [2] D.F. Bacon et al. “High-Level Real-Time Programming in Java”. In: *Proc. International Conference on Embedded Software (EMSOFT)*. ACM, 2005. Click here for PDF file.
- [3] C.M. Kirsch. “Principles of Real-Time Programming”. In: *Proc. International Workshop on Embedded Software (EMSOFT)*. Vol. 2491. LNCS. Springer, 2002, pp. 61–75. Click here for PDF file.

PROCEEDINGS

- [1] Gernot Heiser and Christoph M. Kirsch, eds. *ACM European Conference on Computer Systems, EuroSys 2011, Salzburg, Austria, April 10 - 13, 2011, Proceedings*. New York, NY, USA: ACM, 2011.
- [2] Christoph M. Kirsch and Mahmut T. Kandemir, eds. *ACM SIGPLAN/SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems, LCTES 2009, Dublin, Ireland, June 19 - 20, 2009, Proceedings*. New York, NY, USA: ACM, 2009.
- [3] Christoph M. Kirsch and Reinhard Wilhelm, eds. *ACM & IEEE International Conference on Embedded Software, EMSOFT 2007, Salzburg, Austria, September 30 - October, 3, 2007, Proceedings*. New York, NY, USA: ACM, 2007.
- [4] Thomas A. Henzinger and Christoph M. Kirsch, eds. *Embedded Software, First International Workshop, EMSOFT 2001, Tahoe City, CA, USA, October, 8-10, 2001, Proceedings*. Vol. 2211. LNCS. Springer, 2001.

BOOK CHAPTERS

- [1] C.M. Kirsch and A. Sokolova. “The Logical Execution Time Paradigm”. In: *Advances in Real-Time Systems*. 2012, pp. 103–120.
- [2] “Handbook of Real-Time and Embedded Systems”. In: ed. by I. Lee, J. Leung, and S.H. Son. CRC Press, 2007. Chap. The Evolution of Real-Time Programming.
- [3] “Software-Enabled Control: Information Technology for Dynamical Systems”. In: ed. by T. Samad and G. Balas. IEEE Press and Wiley-Interscience, 2003. Chap. ”Embedded Control Systems Development with Giotto”.

SYSTEM PAPERS

- [1] R. Alur et al. “jMocha: A Model Checking Tool that Exploits Design Structure”. In: *Proc. International Conference on Software Engineering (ICSE)*. 2001. Click here for PDF file.
- [2] C. Weidenbach et al. “SPASS v0.77”. In: *Journal of Automated Reasoning* 21.1 (1998).

SHORT TALKS AND POSTERS

- [1] M. Dodds, A. Haas, and C.M. Kirsch. *Fairness vs. Linearizability in a Concurrent FIFO Queue*. Short Talk at the Joint Euro-TM/MEDIAN Workshop on Dependable Multicore and Transactional Memory Systems (DMTM). 2014.
- [2] E. Pereira et al. *A Networked Robotic System and its Use in an Oil Spill Monitoring Exercise*. Short Talk at the International Workshop on the Swarm at the Edge of the Cloud. 2013. [Click here for PDF file](#).
- [3] J. Huang, C.M. Kirsch, and R. Sengupta. *Scalability of Vehicle Networks through Vehicle Virtualization*. Poster at the International Workshop on the Swarm at the Edge of the Cloud. 2013. [Click here for PDF file](#).
- [4] H. Payer, H. Röck, and C.M. Kirsch. *Get What You Pay For: Providing Performance Isolation in Virtualized Execution Environments*. Poster at the ACM SIGOPS European Systems Conference (EuroSys). 2010. [Click here for PDF file](#).
- [5] S.S. Craciunas et al. *Everyone Virtualizes Everything But Time*. Poster at the IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS). 2009. [Click here for PDF file](#).

TECHNICAL REPORTS

- [1] M. Dodds, A. Haas, and C.M. Kirsch. *Fast Concurrent Data-Structures Through Explicit Timestamping*. Tech. rep. 2014-03. Department of Computer Sciences, University of Salzburg, Feb. 2014. [Click here for PDF file](#).
- [2] C.M. Kirsch, M. Lippautz, and H. Payer. *Fast and Scalable k-FIFO Queues*. Tech. rep. 2012-04. Department of Computer Sciences, University of Salzburg, June 2012. [Click here for PDF file](#).
- [3] T.A. Henzinger et al. *Quantitative Relaxation of Concurrent Data Structures*. Tech. rep. 2012-03. Department of Computer Sciences, University of Salzburg, May 2012. [Click here for PDF file](#).
- [4] C.M. Kirsch et al. *Performance, Scalability, and Semantics of Concurrent FIFO Queues*. Tech. rep. 2011-03. Department of Computer Sciences, University of Salzburg, Sept. 2011. [Click here for PDF file](#).
- [5] S.S. Craciunas, C.M. Kirsch, and A. Sokolova. *The Power of Isolation*. Tech. rep. 2011-02. Department of Computer Sciences, University of Salzburg, July 2011. [Click here for PDF file](#).
- [6] C.M. Kirsch et al. *Runtime Programming through Model-Preserving, Scalable Runtime Patches*. Tech. rep. 2010-08. Department of Computer Sciences, University of Salzburg, Dec. 2010. [Click here for PDF file](#).
- [7] C.M. Kirsch, H. Payer, and H. Röck. *Scal_g: Non-Linearizable Computing Breaks the Scalability Barrier*. Tech. rep. 2010-07. Department of Computer Sciences, University of Salzburg, Nov. 2010. [Click here for PDF file](#).
- [8] M. Aigner et al. *Short-term Memory for Self-collecting Mutators - Revised Version*. Tech. rep. 2010-06. Department of Computer Sciences, University of Salzburg, Oct. 2010. [Click here for PDF file](#).
- [9] M. Aigner et al. *Short-term Memory for Self-collecting Mutators*. Tech. rep. 2010-03. Department of Computer Sciences, University of Salzburg, Apr. 2010. [Click here for PDF file](#).
- [10] S.S. Craciunas, C.M. Kirsch, and A. Sokolova. *Power-aware Temporal Isolation with Variable-Bandwidth Servers*. Tech. rep. 2010-02. Department of Computer Sciences, University of Salzburg, Apr. 2010. [Click here for PDF file](#).
- [11] S.S. Craciunas, C.M. Kirsch, and A. Sokolova. *Response Time versus Utilization in Scheduler Overhead Accounting*. Tech. rep. 2009-03. Department of Computer Sciences, University of Salzburg, Aug. 2009. [Click here for PDF file](#).
- [12] S.S. Craciunas et al. *Concurrency and Scalability versus Fragmentation and Compaction with Compact-fit*. Tech. rep. 2009-02. Department of Computer Sciences, University of Salzburg, Apr. 2009. [Click here for PDF file](#).
- [13] S.S. Craciunas et al. *Real-Time Scheduling for Workload-oriented Programming*. Tech. rep. 2008-02. Department of Computer Sciences, University of Salzburg, Sept. 2008. [Click here for PDF file](#).
- [14] S.S. Craciunas, C.M. Kirsch, and H. Röck. *Shaping Process Semantics*. Tech. rep. 2007-01. Department of Computer Sciences, University of Salzburg, Apr. 2007. [Click here for PDF file](#).

- [15] M. Törnigren et al. *Co-Design of Control Systems and Their Real-Time Implementation — A Tool Survey*. Tech. rep. KTH/MMK/R-06/11-SE. Stockholm, Sweden: Department of Machine Design, Royal Institute of Technology (KTH), Sept. 2006. Click here for PDF file.
- [16] A. Ghosal et al. *Hierarchical Timing Language*. Tech. rep. UCB/EECS-2006-79. EECS Department, University of California, Berkeley, May 2006. Click here for PDF file.
- [17] C.M. Kirsch and H. Röck. *Traffic Shaping System Calls Using Threading by Appointment*. Tech. rep. T009. Department of Computer Sciences, University of Salzburg, Aug. 2005. Click here for PDF file.
- [18] C.M. Kirsch. *Threading by Appointment*. Tech. rep. T003. Department of Computer Sciences, University of Salzburg, Sept. 2004. Click here for PDF file.
- [19] C.M. Kirsch, T.A. Henzinger, and M.A.A. Sanvido. *A Programmable Microkernel for Real-Time Systems*. Tech. rep. UCB/CSD-03-1250. California: University of California at Berkeley, June 2003. Click here for PDF file.
- [20] T.A. Henzinger, C.M. Kirsch, and S. Matic. *Schedule-Carrying Code*. Tech. rep. UCB/CSD-03-1230. California: University of California at Berkeley, Feb. 2003. Click here for PDF file.
- [21] C.M. Kirsch. *The Embedded Machine*. Tech. rep. UCB/CSD-01-1137. California: University of California at Berkeley, Mar. 2001. Click here for PDF file.
- [22] T.A. Henzinger, B. Horowitz, and C.M. Kirsch. *Giotto: A Time-Triggered Language for Embedded Programming*. Tech. rep. UCB/CSD-00-1121. California: University of California at Berkeley, 2000. Click here for PDF file.
- [23] F. Jacquemard, C. Meyer, and C. Weidenbach. *Unification in Extensions of Shallow Equational Theories*. Tech. rep. MPI-I-98-2-002. Saarbrücken, Germany: Max Planck Institute for Computer Science, Jan. 1998. Click here for PDF file.
- [24] P. Graf and C. Meyer. *Extended Path-Indexing*. Tech. rep. MPI-I-93-253. Saarbrücken, Germany: Max Planck Institute for Computer Science, Dec. 1993. Click here for PDF file.

THESES

- [1] C. Meyer. “Soft Typing for Clausal Inference Systems”. PhD Thesis. Saarbrücken, Germany: Saarland University, 1999. Click here for PDF file.
- [2] C. Meyer. “Parallel Unit Resulting Resolution”. Master’s Thesis. Saarbrücken, Germany: Saarland University, 1996. Click here for PDF file.

SOFTWARE

1. The Scal Project: High-Performance, Multicore-Scalable Data Structures, with Andreas Haas, Thomas A. Henzinger, Michael Lippautz, Hannes Payer, Ali Sezgin, and Ana Sokolova. Web: <http://scal.cs.uni-salzburg.at>
2. The Tiptoe Project: A Compositional Real-Time Operating System, with Silviu Craciunas, Hannes Payer, Harald Röck, Ana Sokolova, and Horst Stadler. Web: <http://tiptoe.cs.uni-salzburg.at>
3. The Jarol Project: A Java Infrastructure for Control Systems, with Bernhard Kast, Eduardo Marques, and Rainer Trummer. Web: <http://jarol.cs.uni-salzburg.at>
4. The JAviator Project: Quadrotor UAV Software Entirely Written in Java, with Joshua Auerbach, David Bacon, Harald Röck, and Rainer Trummer. Web: <http://javiator.cs.uni-salzburg.at>
5. The TAP Project: Concurrent Programming with Threading by Appointment, with Silviu Craciunas and Harald Röck. Web: <http://tap.cs.uni-salzburg.at>
6. The HTL Project: Compositional Real-Time Programming in a Hierarchical Timing Language, with Arkadeb Ghosal, Thomas A. Henzinger, Daniel Iercan, and Alberto L. Sangiovanni-Vincentelli. Web: <http://htl.cs.uni-salzburg.at>

7. Giotto: An Embedded Programming Language, Compiler, and Runtime System for Distributed Control Systems, with Arkadeb Ghosal, Thomas A. Henzinger, Slobodan Matic, and Marco A.A. Sanvido. Web: <http://embedded.eecs.berkeley.edu/giotto>
8. jMocha: A Model Checking Tool that Exploits Design Structure, with Rajeev Alur, Luca de Alfaro, Radu Grosu, Thomas A. Henzinger, Minsu Kang, Rupak Majumdar, Freddy Mang, and Bow-Yaw Wang. Web: <http://embedded.eecs.berkeley.edu/research/mocha>
9. SPASS v0.77: An Automated Theorem Prover for First-Order Logic with Equality, with Christoph Weidenbach, Christian Cohrs, Thorsten Engel, and Enno Keen. Web: <http://spass.mpi-sb.mpg.de>
10. PURR: Parallel Unit Resulting Resolution, a concurrent first-order theorem prover with advanced indexing operations, see Master's Thesis.
11. ACID: A Collection of Indexing Data Structures, implemented in C and Prolog, with Peter Graf.

HARDWARE

1. The JAviator: A Quadrotor Helicopter and Software Laboratory for Time-Portable Java Programming, with Rainer Trummer. Web: <http://javiator.cs.uni-salzburg.at>