

Angelo Corsaro

Education

- December 2004** **Ph.D. in Computer Science**, Department of Computer Science and Engineering, Washington University in St. Louis. “*Techniques and Patterns for Safe and Efficient Real-Time Middleware*”. Advisors, Ron K. Cytron and Douglas C. Schmidt.
- December 2001** **M.S. in Computer Science**, Department of Computer Science, Washington University in St. Louis. “*Juno a Framework for Reconciling Scheduling Disciplines*”. Advisors, Ron K. Cytron and Douglas C. Schmidt.
- July 1999** **Laurea in Computer Engineering** (*magna cum laude*), Università degli Studi di Catania. “*Pattern Oriented Analysis Design and Implementation of and Advanced Communication Toolkit*”. Advisors, Sergio Palazzo and Alfio Lombardo.

Work Experience

- **June 2005—Present Software Technologies Scientist, SELEX SI, Strategic and Technological Planning Directorate.**

As a Software Technologies Scientist, I support, the director of the *Strategic and Technological Planning Directorate*, by investigating new computing technologies, defining new company wide technology evolutions, research directions and R&D investments, and taking care of strategic standardization.

With respect to R&D, the main activities I am involved in are described below.

1. Since June 2006 I've been leading a FINMECCANICA research group, which performs industrial research on Multi-Core Processors, such as IBM Cell Broadband Engine.

2. Since January 2006, I am the chair of the scientific committee which defines the research agenda for the FINMECANNICA Software Laboratory initiative, and as part of this role I (1) oversee and collaborate with Academic institutions involved in the initiative, and (2) co-advise Ph.D. students funded by the initiative.
3. Since June 2005, I am involved, as consultant and researcher, in an internal research project performing Complex Systems, and specifically with respect to the problem of data dissemination, storage, and retrieval.

Since June 2005, I am responsible for company wide strategic standardization at the Object Management Group (OMG), where I co-chair the Data Distribution Service (DDS) Special Interest Group, and the Real-Time Embedded and Specialized Services Task Force. As part of these activities, in the past few years I've been involved in the standardization of Enhanced View of Time 2.0, Load Balancing, Data Distribution Service Wire Protocol, Lightweight Distributed Real-Time Fault-Tolerance Service, and High Level Services of Combat Management Systems, such as System Management, Alert Management, etc.

- **Dec 2003–June-2005. Research Scientist, SELEX-SI, R&D Department.**

As a Research Scientist at SELEX-SI I was involved into three main set of activities,

1. leading the design and development of an Enterprise Middleware for next generation Safety and Mission Critical Systems, such as, Air Traffic Control Systems, Airborne Systems, Naval Combat Management Systems,
2. performing research on Network Centric Systems, and specifically to the problem of large scale data dissemination and access, and
3. working at the standardization, through the Object Management Group (OMG) of middleware services for Data Distribution Service (DDS) Interoperability, Real-Time Fault Tolerant CORBA, and High Level Services of Combat Management Systems, such as System Management, Alert Management, etc.

- **Jan 2003–Dec 2003. Research Assistant, Distributed Object Computing Group, Department of Computer Science Washington University in St. Louis. Supervisor, Prof. R. K. Cytron, D. C. Schmidt.**

Sep 2001-July 2002, Sep 2002-Dec 2002. Research Assistant, Distributed Object Computing Group, Electrical and Computer Engineering Department, University of California at Irvine. Supervisor, Prof. D. C. Schmidt.

During my PhD I spent half of the time working as research assistant at the Washington University in St. Louis, and half of the time at the University of California at Irvine. For most of my PhD I performed core research on safe and efficient real-time middleware and programming languages. The main focus of this research centered around Real-Time Java, with the goal of investigating techniques, algorithms, data structures and memory models that could make a productive and easy to use environment, such as Java, an effective language for mission critical real-time applications. As a result of this research activity, jRate, a compiler based real-time Java implementation was produced. jRate has

had a deep impact on the real-time and mission critical computing research and development community, and it is currently used as a basis for experiment and research at University Laboratories such as, York University, Purdue University, University of California at Irvine, Washington University, MIT etc, as well as prestigious industrial research laboratories such as the NASA JPL, BOEING, Lockheed Martin Advanced Technology Lab, US Navy, Raytheon, etc. As part of this research I have actively collaborated with BOEING and Lockheed Martin within the DARPA PCES program, and with the NASA JPL on the Mars Explorer 2009 mission. Indeed the software of the next generation Mars Explorer will be written engineered in Real-Time Java.

While at the University of California at Irvine, I also collaborated with the Embedded Software Group, led by Rajesh Gupta, on the design of formal languages for embedded systems design. My main contribution in this research was that of extending an existing formal language to provide support for the formal specification and composition of cross-cutting concerns such as real-time and distribution concerns.

- **July 2002-Sep 2002. Visiting Researcher, Communication Research Group, Simula Laboratory, Oslo, Norway. Supervisor, Prof. G. Blair, Prof. F. Eliassen**
Performed research on QoS enabled Software Components Model, with particular attention to multimedia applications needs, *e.g.*, audio/video streaming. The main contribution was the definition of the basic architecture of the QuA Reflective Component Model.
- **Jan 2000-Aug 2001. Research Assistant, Distributed Object Computing Group, Department of Computer Science Washington University in St. Louis. Supervisor, Prof. R. K. Cytron, D. C. Schmidt.**
Performed Research on distributed real-time CORBA, and specifically on distributed dynamic scheduling. The main contribution of this research was a formalization of the problem of schedulers interoperability across heterogeneous run-time systems and a reflective framework, called Juno, which automatically reconciles heterogeneous scheduling policies so to provide end-to-end QoS in face of heterogeneity.
- **Jan 1998-Jul 1998. Undergraduate Research, University of Catania. Supervisor, Prof. Orazio Mirabella, Prof. Salvatore Cavalieri.**
Performed Research on real-time scheduling algorithms for field-buses. Main contribution of this research was a new schedulability bound, and a formalization, and solution, of the end-to-end field-bus scheduling problem.
- **May 1997-Dec 1997. Undergraduate Research, University of Catania. Supervisor, Prof. Lorenzo Vita.**
Performed core research on Load Balancing architectures and algorithms.

Teaching Experience

Spring 2006	Series of advanced lectures on Middleware at the University of Rome la Sapienza
Fall 2002	Lecturer for a Middleware class at the University Of California at Irvine.
Spring 2002	Lecturer for a Design Pattern Class at the University of California at Irvine
Fall 2000	Lecturer for a Software Engineering Class at the Washington University in St. Louis.

Research

Research Interest

Distributed Real-Time and Embedded Systems; Programming Languages Theory and Practice; Virtual Machines; Memory Management; Multi-Core Computing Systems; Software Systems Performance Evaluation; Reflective Middleware; Complex Systems; Distributed Algorithms, Systems and Distributed Computing; Gossip Protocols; Peer-to-Peer Open Source; Generative Programming; Object Oriented Methodologies; Software Patterns; Software Components; Systems; eXtreme Programming; Operating Systems; Meta Object Protocols; Aspect Oriented Programming.

Research Contributions

During the past two year, one of my main research focus has been on researching innovative and effective solutions of the company-wide next generation enterprise middleware platform for mission critical applications. In this context, key contributions have been architectures and algorithms for high performance, scalable and high availability middleware services. Another area of research I've been actively involved in, has been data dissemination and retrieval in large scale Network Centric Systems.

While pursuing my PhD, I performed most of my research on Real-Time Java, Real-Time Distributed Embedded Systems, and Reflective Middleware. The results of my research on Real-Time Java have provided (1) improvements on algorithms used to performs safety checks (*i.e.* from $O(n)$ to $O(1)$ worst case complexity), (2) extension to the Real-Time Java Memory Model, and (3) guidelines and techniques for efficient and predictable Real-Time Java Middleware implementation. The outcome of this research has been **jRate**.

jRate extends the GNU Compiler for Java (GCJ), to provide an ahead of time compiler for Real-Time Java. jRate is currently used by top notch Universities and Industrial research centers across the world, such as Washington University, York University, University of California, MIT, Purdue University, NASA JPL. BOEING, Lockheed Martin Advanced Technology Lab, Raytheon, US Navy and US Air Force Research Laboratory (AFRL). Moreover, jRate was selected as one of the Real-Time Java platform for running BOEING

UAV (Unmanned Air Vehicle) software within the DARPA PCES Program – recently jRate successfully passed a BOEING UAV fly test.

Another relevant part of this research has focused on systematically identifying the critical quality indexes of Real-Time Java implementations, and devising techniques for their measurement. The outcome of this research has been the development of **RTJPerf**, the first benchmarking suite for Real-Time Java compliant applications. RTJPerf is actively used by NASA JPL, BOEING and AFRL to evaluate the fitness of Real-Time Java implementations w.r.t. their domain operational requirements. In the area of embedded computing, my research has also provided new patterns for memory-constrained devices.

In the real-time distributed computing arena, my research has contributed (1) scheduling disciplines and feasibility tests for end-to-end scheduling in real-time networks, (2) systematic understanding, patterns and optimization principles for building Real-Time CORBA ORBs, and (3) a reflective platform for scheduler interoperability in open systems.

Publications

Books

1. On the Move to Meaningful Internet Systems 2004: OTM 2004 Workshops, Agia Napa, Cyprus, October 25-29, 2004. Proceedings Series: *Lecture Notes in Computer Science, Vol. 3292*, Meersman, Robert; Tari, Zahir; Corsaro, Angelo (Eds.) 2004, XXIII, 885 p. ISBN: 3-540-23664-3.

Book Chapters

1. Angelo Corsaro, Douglas C. Schmidt, Raymond Klefstad, and Carlos O'Ryan. Virtual Component: a Design Pattern for Memory-Constrained Embedded Applications, *Design Patterns for Distributed and Real-time Systems*, edited by Christopher Gill and Lisa DiPippo, Kluwer Academic Publishers, 2007.
2. A. Corsaro, L. Querzoni, S. Scipioni, S. Tucci-Piergiovanni, A. Virgillito. Global Data Management, *IOS Press*, 2006
3. A. Khrisna, R. Klefstad, D. C. Schmidt, A. Corsaro. Middleware for Communications. *Wiley and Sons*, August 2004. ISBN: 0470862068.
4. M. Kircher, P. Jain, A. Corsaro, D. Levine. XP Perspectives. *Addison Wesley Professional Series*, Spring 2002. ISBN: 0201770059.

Refereed Journal Publications

1. “Concurrency and Computation: Practice and Experience, Special Issue: First International Workshop on Emerging Technologies for Next-generation GRID”. John Wiley and Sons, Vol. 18 Issue 8, Jul 2006. Edited by A. Corsaro, C. Santoro.
2. A. Corsaro and D. C. Schmidt. The Design and Performance of Real-time Java Middleware. *IEEE Transactions on Parallel and Distributed Systems*, Volume 14, Number 11, January 2003, pp. 1155-1167.
3. S. Cavalieri, S. Monforte, A. Corsaro, G. Scapellato. Multicycle Polling Scheduling Algorithms for Fieldbus Networks. *Real-Time Systems*, Volume 11, Number 2-3 September 2003, pp.157-185.

Refereed Conference Publications

1. A. Corsaro, S. Tucci, L. Querzoni, S. Scipioni, R. Baldoni. A Adaptive Coupling-Based Algorithm for Internal Clock Synchronization of Large Scale Dynamic Systems. *Submitted to the 13th ACM/IEEE/IFIP International Conference Euro-Par 2007 (EUROPAR07)*, August 2007, Rennes, France .
2. A. Corsaro, C. Santoro. The Analysis and Evaluation of Design Patterns for Distributed Real-Time Java Software. To Appear at the *16th IEEE International Conference on Emerging Technologies and Factory Automation 2005 (ETFA05)*, September 2005, Catania, Italy.
3. A. Corsaro, R. K. Cytron. Efficient Memory-Reference Checks for Real-Time Java. In *LCTES '03: Proceedings of the 2003 ACM SIGPLAN conference on Language, compiler, and tool for embedded systems*, June 2003, San Diego, CA, USA
4. A. Krishna, D. C. Schmidt, R. Klefstad, and A. Corsaro. Towards Predictable Real-time Java Object Request Brokers. *Proceedings of the 9th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2003)*, May 2003, Toronto, Canada.
5. A. Corsaro, D. C. Schmidt. Design and Performance of jRate Real-Time Java Implementation. In *CoopIS/DOA/ODBASE (2002)*, R. Meersman and Z. Tari, Eds., vol. 2519 of *Lecture Notes in Computer Science*, Springer, October 2002, Irvine, CA, USA.
6. A.Corsaro, D. C. Schmidt. Evaluating Real-Time Java Features and Performance for Real-Time Embedded Systems. *Proceedings of the 8th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2002)*, San Jose, CA, USA, September 2002.
7. A. Corsaro, D. C. Schmidt, R. Klefstad, C. O’Ryan. Virtual Component a Design Pattern for Memory Constrained Embedded Applications. In *Proceedings of the 9th Conference on Pattern Languages of Programs*, Urbana, IL, USA, September 2002.
8. M. Kiercher, P. Jain, A. Corsaro. XP + AOP = Better Software? In *Proceedings of the 3rd International Conference on eXtreme Programming and Agile Processes in Software Engineering*, May 2002, Alghero, Italy.

9. A. Corsaro, C. D. Gill, R. K. Cytron, D. C. Schmidt. Formalizing Meta-Programming Techniques to Reconcile Heterogeneous Scheduling Policies in Open Distributed Real-Time Systems. *In Proceedings of the 3rd International Symposium on Distributed Object and Applications*, September 2001, Rome, Italy.
10. M. Kiercher, P. Jain, A. Corsaro, D. Levine. Distributed eXtreme Programming. *In Proceedings of the 2nd International Conference on eXtreme Programming and Agile Processes in Software Engineering*, May 2000, Cagliari, Italy.
11. S. Cavalieri, A. Corsaro, O. Mirabella, G. Scapellato. Scheduling Periodic Information Flow in Fieldbus and Multi-Fieldbus Environment. *In Proceedings of the International Conference on Automation*, November 1998, Milano, Italy.

Refereed Workshop Publications

1. A. Corsaro. CARDAMOM: A Middleware for Next Generation Mission and Safety Critical Systems. *In Proceedings of the 8th IEEE International Symposium on Object-oriented Real-time distributed Computing*, May 2005, Seattle, Washington.
2. A. Corsaro, C. Santoro. Optimizing JVM Object Management Operations to Improve WCET Predictability. *In Proceedings of the 4th International Workshop on Worst-Case Execution Time (WCET) Analysis*, in conjunction with the 16th Euromicro International Conference on Real-Time Systems (2004).
3. A. Corsaro, C. Santoro. Design Patterns for RTSJ Application Development. In Meersman, R., Tari, Z., And Corsaro, A., Eds. *On the Move to Meaningful Internet Systems 2004: OTM 2004 Workshops*, Agia Napa, Cyprus, October 25-29, 2004. *Proceedings (2004)*, vol. 3292 of *Lecture Notes in Computer Science*, Springer.
4. A. Corsaro, C. Santoro. A C++ Native Interface for Interpreted JVMs. In Meersman, R., Tari, Z., Eds. *On The Move to Meaningful Internet Systems 2003: OTM 2003 Workshops*, OTM Confederated International Workshops, Catania, Sicily, Italy, November 3-7, 2003, *Proceedings (2003)*, vol. 2889 of *Lecture Notes in Computer Science*, Springer.
5. A. Corsaro, R. Cytron. Implementing and Optimizing Real-Time Java. *In Proceedings of the 11th IEEE International Workshop on Parallel and Distributed Real-Time Systems*. IPDPS, April 2003, Nice, France.
6. M. Mousavi, G. Russello, M. Chaudron, M. Reniers, T. Basten, A. Corsaro, S. Shukla, R. Gupta, D.C. Schmidt. Using Aspect-GAMMA in Design Validation and Verification of Embedded Systems. *In Proceedings of the IEEE International High Level Design, Validation and Testing Workshop*, October 2002, Cannes, France.
7. M. Mousavi, G. Russello, M. Chaudron, M. Reniers, T. Basten, A. Corsaro, S. Shukla, R. Gupta, D.C. Schmidt. Aspects + GAMMA = AspectGAMMA: A Formal Framework for Aspect Oriented Specification. *In Proceedings of the Early Aspects: Apect Oriented Requirements Engineering and Architecture Requirements Workshop*. April 2002, Enschede, The Netherlands.

Trade Journal Publications

1. A. Corsaro. *CARDAMOM: Next Generation Enterprise Middleware for Mission and Safety Critical Systems*. Alenia Marconi System Journal, Jan 2005.

Trade Conference Publications

1. A. Corsaro, D.C. Schmidt. Empirical Analysis of Real-Time Java Performance and Predictability. *OMG Second Real-Time and Embedded Distributed Object Computing Workshop*, July 2002, Arlington, VA, USA.
2. A. Corsaro, C. D. Gill, R. K. Cytron. Applying Meta-Programming Techniques to Dynamically Order Equivalence Classes in Open Distributed Real-Time Systems. *OMG Real-Time and Embedded Distributed Object Computing Workshop*, June 2001, Washington DC, USA.

Technical Reports

1. A. Corsaro. Free/Open Source Software and the Private Collective Innovation Model. FINMECCANICA Intellectual Property Rights Guidelines. March 2006.
2. A. Corsaro. Techniques and Patterns for Safe and Efficient Real-Time Middleware. *Department of Computer Science and Engineering, Washington University, WUCS-04-54*.
3. A. Corsaro, D. C. Schmidt. Evaluating Real-Time Java Features and Performances for Real-Time Embedded Systems. *Electrical and Computer Engineering Department, University of California at Irvine, TR-2002-01*.
4. A. Corsaro. Juno: A Framework for Reconciling Scheduling Discipline. *Department of Computer Science, Washington University, WUCS-01-24*.

Tutorials

1. Design Patterns. *Alenia Marconi Systems Radar and Software System School*, November 2003.
2. Future Trends in C4I Systems. *Alenia Marconi Systems Radar and Software System School*, May 2003.
3. Policies and Patterns for High-Performance, Real-Time Object Request Broker. *The 3rd International Symposium on Distributed Object and Applications*, Rome, Italy, September 2001.

Panels

1. A. Corsaro, G. Pardo-Castellote, Han van't Hag, V. Watine. *Evolving the Data Distribution Service*—OMG Data Distribution Service Information Day, Anaheim, September 2006.
2. A. Corsaro, R. Davoli, R. Stallman, A. Vocca. *Perspectives on Free and Open Source Software*. University Federico II of Naples, Italy, March 2006.
3. G. Bollella, A. Corsaro, K. Nielsen, A. Wellings—The Present and the Future of Real-Time Java—The 1st Workshop on Java Technologies for Real-Time and Embedded Systems, Catania, Italy, November 2003.
3. G. Bollella, A. Corsaro, D. Jensen and K. Nielsen—*Real-Time Java*— The 8th IEEE Real-Time and Embedded Technology and Applications Symposium, San Jose, CA, USA, September 2002.

Invited Talks

1. *Data Distribution in Next Generation European Air Traffic Flight Data Processor*— 2nd OMG Data Distribution Service Information Day, December 2007, Washington DC, USA.
2. *Data Distribution in Mission and Safety Critical Systems*— 1st OMG Data Distribution Service Information Day, September 2007, Anaheim, CA, USA.
3. *Real-Time Middleware*— Engineering Department, University of Bologna, May 18th 2006, Bologna, Italy.
4. *Free/Open Source Software and the Private/Collective Innovation Model*-- University Federico II of Naples, 24 March 2006.
5. *Techniques and Patterns for Safe and Efficient Real-Time Middleware* – Department of Computer Science, University of California at Riverside, May 1st 2006, Riverside, CA, USA.
6. *Java and Real-Time Java in Mission and Safety Critical Systems* – Workshop on Mission and Safety Critical Java, JAWS 2005, September 22-23 , Palo Alto, CA, USA.
7. *Current and Future Trends in Real-Time and Embedded Systems Development*— Politecnico di Milano, Italy, April 2003.
8. *Implementing and Optimizing Real-Time Java—The 11th International Workshop on Parallel and Distributed Real-Time Systems*, IPDPS, Nice, France April 2003.
9. *Real-Time Java*—Università La Sapienza, Roma, Italy, March 2003.
10. *Design and Performances of jRate: The Chameleonic Real-Time Java Implementation*— Computing Department, Lancaster University, UK, September 2002.

11. *Design and Performances of jRate: The Chameleonic Real-Time Java Implementation*—Simula Research Laboratory, Oslo, Norway, September 2002.
12. *Real-Time Distributed Computing with CORBA*—Simula Research Laboratory, Oslo, Norway, September 2002.
13. *Real-Time CORBA in a Nutshell*—Center for Embedded Computing, University of California, Irvine, CA, USA, May 2002.
14. *eXtreme Programming*—Department of Computer Science, Washington University, May 2001.

Professional Activities

Memberships

- Association for Computing Machinery (ACM).
- IEEE Computer Society.

Program Committees and Conference Organization

- Program Committee Member, “*Java Technologies for Real-Time and Embedded Systems*”, Wien, Austria, October 2007.
- Program Committee Member, “*OMG Real-Time Workshop*”, Washington DC, July 2007.
- Co-Organizer of the Middleware 2005 Workshop “*The 5th Workshop on Reflective and Adaptive Middleware*” along with, Nalini Venkatasubramanian (University of California at Irvine) and Geoff Coulson (Lancaster University, UK), Melbourne, Australia, November 27-December 1st, 2006.
- Co-Organizer and Program Committee Member, “*Java Technologies for Real-Time and Embedded Systems*”, Paris, France, 11-13 October, 2006.
- Program Committee Member of “*The 6th IFIP Conference on Distributed Applications and Interoperable Systems*”, DAIS 2006.
- Program Committee Member of “*The International Conference on Self-Organization and Adaptation of Multi-Agent and Grid Systems*”, SOAS 2006
- Program Committee Member of “*The Track on Separation of Concerns at the 21th ACM Symposium on Applied Computing*”, SAC PSC 2006.
- Co-Organizer of the Middleware 2005 Workshop “*The 4th Workshop on Reflective and Adaptive Middleware*” together with Fabio Costa (University of Goias, Brazil), Nalini Venkatasubramanian (University of California at Irvine) and Nanbor Wang (TechX Cooperation), Grenoble, France, November 28, 2005.

- Program Committee Member of “*The International Conference on Self-Organization and Adaptation of Multi-Agent and Grid Systems*”, SOAS 2005
- General Co-Chair of the WETICE (2005) Workshop “*Emerging technologies for next-generation grid*” together with A. Di Stefano, G. Pappalardo, S. Santoro, and E. Tramontana. Linkoping, Sweden, June 13-15, 2005.
- General Co-Chair of the Middleware 2004 Workshop “*The 3rd Workshop on Reflective and Adaptive Middleware*” together with Fabio Costa (University of Goias, Brazil), Geoff Coulson (Lancaster University, UK), Nalini Venkatasubramanian (University of California at Irvine) and Nanbor Wang (Washington University), Toronto, Ontario, Canada, October 19-23, 2004.
- General OTM 2004 Workshop Chair. OTM 2004 Workshops, Agia Napa, Cyprus, October 25-29, 2004.
- General Co-Chair of the OTM2004 Workshop “*Java Technologies for Real-Time and Embedded Systems*” together Corrado Santoro (University of Catania, Italy), Agia Napa, Cyprus, October 25-29, 2004.
- General Co-Chair of the WETICE (2004) Workshop “*Emerging technologies for next-generation grid*” together with A. Di Stefano, G. Pappalardo, S. Santoro, and E. Tramontana. Modena, Italy 2004. June 15-16, 2004.
- Session Chair for the System Engineering and Ubiquitous Technical Session at DOA 2003, November 3 - 7, 2003.
- General Co-Chair of the OMT2003 Workshop “*Java Technologies for Real-Time and Embedded Systems*” together Corrado Santoro (University of Catania, Italy), Ron Cytron (Washington University, USA), Catania, Italy, November 6, 7 2003.
- General Co-Chair of the Middleware 2003 Workshop “*The 2nd Workshop on Reflective and Adaptive Middleware*” together with Fabio Costa (University of Goias, Brazil), Geoff Coulson (Lancaster University, UK), Nalini Venkatasubramanian (University of California at Irvine) and Nanbor Wang (Washington University), Rio de Janeiro, Brazil, June 17 2003.
- Organizing Chair for The *International Symposium on Distributed Objects and Applications* (DOA 2002), and The Federated Conferences “*On The Move To Meaningful Internet Systems and Ubiquitous Computing*”, Irvine, CA, USA, October 28 November 1 2002.
- Session Chair at the Workshop on Foundations of Middleware Technologies, November 1, 2002.
- Session Chair of the Reflection technical papers session at DOA 2002, October 30, 2002.
- Co-organizer of the OOPSLA '01 Workshop *Towards Patterns and Pattern Languages for OO Distributed Real-time and Embedded Systems* together with M. Kircher (Siemens AG), P. Jain (Siemens AG), and D. C. Schmidt (University of California, Irvine), Tampa Bay, FL, USA, October 14, 2001.

I regularly serve as a reviewer for IEEE Journal and as program committee member for referred Workshop and Conferences.

Steering Committees & Chairmanships

1. Technical Director COSMIC Public/Private Research Laboratories on Middleware for Mission and Safety Critical Middleware. Since January 2007.
2. Chairman of the FINMECCANICA Software Initiative Scientific Committee, Since January 2006.
3. Chairman of the FINMECCANICA Embedded Systems Panel, since January 2006.
4. Chairman of the FINMECCANICA Information and Communication Technologies Panel, since January 2006
5. Funding Member of the steering committee for Java Technologies for Real-Time and Embedded Systems along with: Greg Bollella (Sun Research), Peter Dibble (TimeSys), Doug Lea (University of New York), Martin Rinard (MIT), Corrado Santoro (University of Catania), Ian Vitek (Purdue University), Andy Wellings (York University).
6. Co-Chair of the Object Management Group (OMG) Real-Time Embedded and Specialized Services Platform Task Force (RTESS).
7. Co-Chair of the Object Management Group (OMG) Data Distribution Special Interest Group (DDS-SIG)

Company Boards

1. Member of the Real-Time Innovation (RTI, <http://www.rti.org>), INC., *Customer Advisory Board*. RTI is a world leader in providing solution for real-time data dissemination.

Interests & Hobbies

Bass Guitar (fretless and fretted), Jazz, Fusion, Bossanova and Classical Music, Windsurfing, Sailing, Rock Climbing, Running, Soccer, Tennis, Math, Chaos Theory, Reading, Writing, Painting, T'ai Chi.

References

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More references available upon request.