Curriculum vitæ of
Florina M. Ciorba, Ph.D.
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EDUCATION

02/2002 - 03/2008 **Ph.D. in Computer Engineering** – with honors
Division of Computer Science, Computing Systems Laboratory
National Technical University of Athens
Athens, Greece
Dissertation title: "Algorithms Design for the Parallelization of Nested Loops" (online)
Advisor: Prof. George Papakonstantinou

09/1996 - 06/2001 **Engineering Diploma in Systems and Computer Science** – with honors
School of Electrotechnics and Informatics
University of Oradea
Oradea, Romania

PROFESSIONAL EXPERIENCE

08/2015 - present **University of Basel**
Department of Mathematics and Computer Science
Assistant Professor (webpage)
Basel, Switzerland

08/2014 - 07/2015 **Technische Universität Dresden**
Center for Information Services and High Performance Computing
Department of Interdisciplinary Application Development and Coordination
Senior Scientist (webpage)
Dresden, Germany

10/2010 - 07/2014 **Technische Universität Dresden**
Center for Information Services and High Performance Computing
Department of Interdisciplinary Application Development and Coordination
Department of Distributed and Data Intensive Computing (10/2013-07/2014)
Postdoctoral Research Associate (webpage)
Dresden, Germany

03/2012 - 10/2012 **Maternity and parental leave**

12/2008 - 09/2010 **Mississippi State University**

Center for Advanced Vehicular Systems
Postdoctoral Research Associate (webpage)
Mississippi State, USA

02/2002 - 02/2008   **National Technical University of Athens**
Division of Computer Science, Computing Systems Laboratory
Research and Teaching Assistant (webpage)
Athens, Greece

08/2001 - 01/2002   **S.C. Astral Telecom S.A.** (now called **UPC**, webpage)
Department of Internet and Data Services
Computer Engineer
Zalãu, Romania

AWARDS AND HONORS

- *Best paper award* of the 2014 International Conference of Parallel and Distributed Computing (ICPDC 2014) of the World Congress on Engineering (WCE 2014) for the paper entitled "Heuristics for robust allocation of resources to parallel applications with uncertain execution times in heterogeneous systems with uncertain availability", co-authored with T. Hansen, A. A. Maciejewski, and H. J. Siegel (Colorado State University), and S. Srivastava and I. Banicescu (Mississippi State University).

- *Best paper award* of the 3rd International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning 2014) of the 28th IEEE International Parallel and Distributed Processing Symposium Workshops and PhD Forum (IPDPSW 2014) for the paper entitled "Portfolio-based selection of robust dynamic loop scheduling algorithms using machine learning", co-authored with N. Sukhija, S. Srivastava, and I. Banicescu (Mississippi State University), and B. Malone (University of Helsinki).

- *Best paper award* of the 10th International Symposium on Parallel and Distributed Computing (ISPDC 2011) for the paper entitled "Enhancing the functionality of a GridSim-based scheduler for effective use with large-scale scientific applications", co-authored with S. Srivastava and I. Banicescu (Mississippi State University), and W. E. Nagel (Technische Universität Dresden).

- *Strathmore's Who's Who*, Listed in the 2010 Strathmore's Who's Who registry.

- *Student travel award* of the Beowulf Cluster Computing with Linux (2nd Edition) & the IEEE Computer Society's Technical Committee on Scalable Computing to attend and present at the 9th International Conference on Cluster Computing (Cluster 2007), Austin, USA, September 17-20, 2007.

- *Ph.D. scholarship* awarded by the Greek State Scholarships Foundation (IKY), Athens, Greece, 11/2004 - 02/2008.

- *Ph.D. fellowship* awarded by the National Technical University of Athens, Greece, 04/2004 - 10/2004.

- *Ph.D. fellowship* awarded by the Institute of Communication and Computer Systems (ICCS), National Technical University of Athens, Greece, 02/2002 - 03/2004.

- *European Union's SOCRATES (Erasmus) scholarship* awarded via the University of Oradea (UO), Romania to be a visiting student at the National Technical University of Athens (NTUA), Greece, 02/2001 - 06/2001.

PROPOSAL WRITING EXPERIENCE

I contributed in the writing of the following selected funding proposals:

- "*Advanced Data Placement via Ad-hoc File Systems at Extreme Scales (ADA-FS)*" – *under evaluation*. Proposal has been submitted by Dr. Wolfgang E. Nagel (Technische Universität Dresden, Germany - Speaker), Dr. André Brinkmann (Johannes Gutenberg University Mainz, Germany), and Dr. Achim Streit (Karlsruhe Institute of Technology, Germany) to the German Research Foundation (DFG) in response to the second call of the Priority Programme 1648 Software for Exascale Computing (SPPEXA) in January, 2015. *Role*: coordination and writing.

- "*Collaborative Research Center 912: Highly Adaptive Energy-Efficient Computing (HAEC)*" (online) – renewal proposal, *under evaluation*. Proposal has been submitted by Dr.-Ing. Dr. h.c. Gerhard Fettweis to the German Research Foundation (DFG), Germany, in October, 2014. *Role*: writing and coordination. *Involvement*: Project group 'Architecture': Describing the work and the role of the existing and projects of the CRC to the HAEC architecture. Co-writing the renewal proposal for existing project A04 (online) given the work in performance analysis and optimization of applications on highly adaptive computing systems in the framework of HAEC.

- "*Cluster of Excellence 1056 Center for Advancing Electronics Dresden (cfAED)*": Orchestration path (online) and resilience path (online) – funded. Proposal submitted by Dr.-Ing. Dr. h.c. Gerhard Fettweis in response to the German Research Foundation (DFG) Excellence Initiative, Germany, 2011. *Role*: participant during writing, on behalf of Prof. Wolfgang Nagel. *Involvement*: Orchestration path: The person with expertise in performance analysis and optimization of applications on heterogeneous computing systems. Resilience path: The person with knowledge about resilience mechanisms at the application level.

- "*Automatic mapping of algorithms onto embedded systems*" – funded. Funding was granted under project name "PYTHAGORAS II - Aid of Research Teams in the Universities", research program "Operational Program Education and Initial Professional Training (E.P.E.A.K. II)", Ministry of National Education and Religious Affairs, Greece, 2004. PI: Dr. G. Papakonstantinou.

- "*Design of algorithms for the parallelization of nested loops*" – funded. Funding was granted under project name "PROTAGORAS", research program "Basic Research Reinforcement", National Technical University of Athens, Greece, 2003. PI: Dr. P. Tsanakas (member of my appointed Advisory Committee). This proposal originates from my thesis work, up to 2003.

PEER-REVIEWER EXPERIENCE

Journals

CPE – Journal of Concurrency and Computation: Practice and Experience, 2009, 2015, 2016

TCC – IEEE Transactions on Cloud Computing, 2015

TCON – International Journal on Control, 2015

FGCS – Future Generation Computer Systems, 2015

Cluster – Journal of Cluster Computing, 2008–2015

TPDS – IEEE Transactions on Parallel and Distributed Systems, 2014

SUSCOM – Journal of Sustainable Computing, Informatics and Systems, 2014

JPDC – Journal of Parallel and Distributed Computing, 2007–2013

TIM – IEEE Transactions on Instrumentation and Measurement, 2011

CiSE – Journal of Computing in Science and Engineering, 2010

PPL – Parallel Processing Letters, 2008

ToC – Transactions on Computers, 2008

Computer – IEEE Computer, 2007

SysSw – Journal of Systems and Software, 2006

PC – Parallel Computing Journal, 2006, 2008

Conferences and workshops

HCW – Heterogeneity in Computing Workshop of the International Parallel and Distributed Processing Symposium, 2014, 2015, 2016

EduHPC – Workshop on Education for High-Performance Computing, 2015

Euro-EDUPar – European Workshop on Parallel and Distributed Computing Education for Undergraduate Students, 2015

ISPDC – International Symposium on Parallel and Distributed Computing, 2014, 2015

IPDPS – International Parallel and Distributed Processing Symposium, 2014

EnA-HPC – International Conference on Energy-Aware High Performance Computing, 2013

SC – International Conference for High Performance Computing, Networking, Storage and Analysis, 2013

ICPP – International Conference on Parallel Processing, 2010, 2011, 2012

ParCo – International Conference on Parallel Computing, 2011

PTW – Parallel Tools Workshop, 2011

Euro-Par – International European Conference on Parallel and Distributed Computing, 2009

ICCS – International Conference on Computational Science, 2010

PDSEC – IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing, 2009

GPC – International Conference on Grid and Pervasive Computing, 2009

HiPerGRID – International Workshop on High Performance Grid Middleware, 2008

ANSS – Annual Simulation Symposium, 2007

CONFERENCE AND WORKSHOP COMMITTEES

EduHPC – Technical program committee member, Workshop on Education for High-Performance Computing (EduHPC) of the 28th ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2015), Austin, USA, November 16, 2015.

Euro-Par – Technical program committee member, Scheduling and Load Balancing track, 22nd International European Conference on Parallel and Distributed Computing (Euro-Par 2016), Grenoble, France, August 22-26, 2015; Technical program committee member 1st European Workshop on Parallel and Distributed Computing Education for Undergraduate Students (Euro-EDUPAR) of the 21st International European Conference on Parallel and Distributed Computing (Euro-Par 2015), Vienna, Austria, August 24, 2015.

IPDPS – International Parallel and Distributed Processing Symposium: Technical program committee member*, 25th International Heterogeneity in Computing Workshop (HCW 2016) of the 30th IPDPS 2016, Chicago, USA, May 23-27, 2016; 24th International Heterogeneity in Computing Workshop (HCW 2015) of the 29th IPDPS 2015, Hyderabad, India, May 25-29, 2015; Algorithms track, 28th IPDPS 2014, Phoenix, USA, May 19-23, 2014; 23rd International Heterogeneity in Computing Workshop (HCW 2014) of the 28th IPDPS 2014, Phoenix, USA, May 19-23, 2014; and technical program session chair, 11th International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC 2010) of the 24th IPDPS 2010, Atlanta, USA, April 19-23, 2010.

ISPDC – International Symposium on Parallel and Distributed Computing: Technical program committee member, 14th ISPDC 2015, Limassol, Cyprus, June 29 - July 2, 2015; 13th ISPDC 2014, Porquerolles, France, June 24-27, 2014.

EnA-HPC – Energy-Aware High Performance Computing: Technical program session chair, Session 6: Applications, 4th EnA-HPC 2014, Dresden, Germany, September 1-2, 2014.

HiPC – International Conference on High Performance Computing: Technical program committee member, Applications track, 21st HiPC 2014, Goa, India, December 17-20, 2014.

ICPP – International Conference on Parallel Processing: Technical program committee member, Applications track, 41st ICPP 2012, Pittsburgh, USA, September 10-13, 2012.

SUPERVISION AND MENTORING

As supervisor at the University of Basel, Switzerland

- Mr. Ali Omar Abdul Azeem (since 2016),

As external reviewer for the following doctoral students, whose primary doctoral supervisor is Prof. Wolfgang E. Nagel from Technische Universität Dresden, Germany.

- Ms. Franziska Hoffeins (since 2013, also remotely co-supervised by Prof. Ioana Banicescu),
- Mr. Siavash Ghiasvand (since 2013), and
- Mr. Ronny Tschüter (since 2012).

SCIENTIFIC RESEARCH INTERESTS AND EXPERIENCE

- **Performance optimization of scientific applications**: dynamic load balancing, robustness and scalability of dynamic loop scheduling.
- **Parallel computing**: high performance computing, large-scale computing, power-aware computing.
- **Performance modeling, simulation, and analysis**: computing and communication models, discrete-event simulation, advanced tracing and profiling.

LIST OF PUBLICATIONS

Ranking: In the sections listed below, journals, conferences and workshops are ranked using the

Computing Research and Education Association of Australasia[1] ranking [2],[3] with **A***, **A**, **B**, or **C**. Not ranked means a journal, conference or workshop that is not contained in the respective rankings.

Notation: Journal articles are numbered using "**J**", book chapters are denoted by "**BC**", conference and workshop papers using "**C**", conference papers under peer-review using "**CUR**", journal articles/conference papers under submission using "**JUS/CUS**", posters using "**P**", invited academic presentations (talks, seminars, and lectures) using "**IT**", and other talks using "**T**".

ARTICLES IN PEER-REVIEWED JOURNALS

J8. N. Sukhija, B. Malone, S. Srivastava, I. Banicescu, and F. M. Ciorba, "A learning-based selection for portfolio scheduling of scientific applications on heterogeneous computing systems", in Parallel and Cloud Computing (online), 3(4), pp. 66-81, October 2014.

J7. I. Riakiotakis, F. M. Ciorba, T. Andronikos, A. T. Chronopoulos, and G. Papakonstantinou, "Towards the optimal synchronization granularity for dynamic scheduling of pipelined computations on heterogeneous computing systems", in Concurrency and Computation: Practice and Experience (online), 24(18), pp. 2302-2327, December 2012, Tier **A**, John Wiley & Sons, Inc., ISSN 15320634.

J6. I. Riakiotakis, F. M. Ciorba, T. Andronikos, and G. Papakonstantinou, "Distributed dynamic load balancing for pipelined computations on heterogeneous systems", in Journal of Parallel Computing, special issue: Advances in Scheduling (online), 37(10-11), pp. 713–729, October-November 2011, Tier **A**, Elsevier B.V., ISSN 01678191.

J5. T. Andronikos, F. M. Ciorba, I. Riakiotakis, A. T. Chronopoulos, and G. Papakonstantinou, "Studying the impact of synchronization frequency on scheduling tasks with dependencies in heterogeneous systems", in Journal of Performance Evaluation (online), 67(12), pp. 1324–1339, December 2010, Tier **A**, Elsevier B.V., ISSN 01665316.

J4. T. Andronikos, F. M. Ciorba, P. Theodoropoulos, D. Kamenopoulos, and G. Papakonstantinou, "Cronus: A platform for parallel code generation based on computational geometry methods", in Journal of Systems and Software (online), 81(8), pp. 1389–1405, August 2008, Elsevier B.V., ISSN 01641212.

J3. F. M. Ciorba, I. Riakiotakis, T. Andronikos, G. Papakonstantinou, and A. T. Chronopoulos, "Enhancing self-scheduling algorithms via synchronization and weighting", in Journal of Parallel and Distributed Computing (online), 68(2), pp. 246–264, February 2008, Tier **A**, Elsevier B.V., ISSN 07437315.

J2. G. Papakonstantinou, I. Riakiotakis, T. Andronikos, F. M. Ciorba, and A. T. Chronopoulos, "Dynamic Scheduling for Dependence Loops on Heterogeneous Clusters", in Journal of Neural, Parallel and Scientific Computing (online), 14(4), pp. 359–384, 2006, Dynamic Publishers, Inc., ISSN 10615369.

J1. F. M. Ciorba, T. Andronikos, and G. Papakonstantinou, "Adaptive Cyclic Scheduling of Nested Loops", in HERMIS International Journal (online), 8, pp. 69–76, October 2006.

ARTICLES UNDER SUBMISSION IN INTERNATIONAL JOURNALS

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[1]The Computing Research and Education (CORE) Association of Australasia (webpage).

[2]CORE ranking of computing journals (webpage).

[3]CORE ranking of computing conferences (webpage).

JUS4. M. Balasubramaniam, I. Banicescu, and F. M. Ciorba, "Predicting and evaluating the robustness of divisible load theory algorithms under multiple sources of perturbations", in IEEE Transactions on Parallel and Distributed Processing, *Under submission.*

JUS3. F. M. Ciorba, E. Franz, S. Pfennig, K. Feldhoff, T. Ilsche, M. Bielert, C. Scheunert, U. Markwardt, W. E. Nagel, and E. A. Jorswieck, "Analysis of parallel applications on a high performance–low energy computer", in Future Generation Computer Systems. *Under submission.*

JUS2. F. M. Ciorba, T. Hansen, S. Srivastava, I. Banicescu, A. A. Maciejewski, and H. J. Siegel, "A dual-stage robustness approach for robust allocation and scheduling of parallel applications with uncertain execution times in heterogeneous computing systems with uncertain availability", in IEEE Transactions on Parallel and Distributed Processing, *Under submission.*

JUS1. I. Banicescu, S. Srivastava, and F. M. Ciorba, "A dynamic load balancing and data migration library for performance improvement of scientific applications on parallel and distributed computing systems", in Elsevier Performance Evaluation, *Under submission.*

CHAPTERS IN PEER-REVIEWED BOOKS

BC1. I. Banicescu, F. M. Ciorba, and S. Srivastava, "Chapter 22: Performance Optimization of Scientific Applications using an Autonomic Computing Approach", pp. 437–466, in Scalable Computing and Communications: Theory and Practice (online), 2013, John Wiley & Sons, Inc.

PAPERS IN PEER-REVIEWED CONFERENCES AND/OR WORKSHOPS

C30. S. Ghiasvand, F. M. Ciorba, R. Tschüter, and W. E. Nagel, "Lessons learned from spatial and temporal correlation of node failures in high performance computers", in Proceedings of the 24th Euromicro International Conference on Parallel, Distributed, and Network-Based Processing (PDP 2016), Tier **C**, Heraklion Crete, Greece, February 17–19, 2016, *To appear.*

C29. M. Bielert, F. M. Ciorba, K. Feldhoff, T. Ilsche, and W. E. Nagel, "HAEC-SIM: A simulation framework for highly adaptive energy-efficient computing platforms", in Proceedings of the 8th European Alliance for Innovation (EAI) International Conference on Simulation Tools and Techniques (SimuTools 2015), Athens, Greece, August 24–26, 2015.

C28. N. Sukhija, I. Banicescu, and F. M. Ciorba, "Investigating the resilience of dynamic loop scheduling in heterogeneous computing systems", in Proceedings of the 14th International Symposium on Parallel and Distributed Computing (ISPDC 2015), Tier **C**, Limassol, Cyprus, June 29–July 1, 2015, pp. 194-203, IEEE, ISBN 9781467371483.

C27. F. M. Ciorba, T. Ilsche, E. Franz, S. Pfennig, C. Scheunert, U. Markwardt, J. Schuchart, D. Hackenberg, R. Schöne, A. Knüpfer, W. E. Nagel, E. A. Jorswieck, and M. S. Müller, "Analysis of parallel applications on a high performance–low energy computer", in Proceedings of the 7th Workshop on UnConventional High Performance Computing 2014 (UCHPC 2014) of the 20th International Conference on Parallel Processing Workshops (Euro-Par 2014), Tier **A**, Porto, Portugal, August 25-26, 2014, pp. 474–485, Springer LNCS 8806, ISBN 9783319143132.

C26. S. Pfennig, E. Franz, F. M. Ciorba, T. Ilsche, and W. E. Nagel, "Modeling Communication Delays for Network Coding and Routing for Error-Prone Transmission", in Proceedings of the 3rd International Conference on Future Generation Communication Technologies 2014 (FGCT 2014), Luton, UK, August 16-18, 2014, pp. 19–24, IEEE, INSPEC Accession Number 14699506.

C25. M. Balasubramaniam, I. Banicescu, and F. M. Ciorba, "Scalability analysis and evaluation of divisible load scheduling", in Proceedings of the 10th International Workshop on Scheduling and Resource Management for Parallel and Distributed Systems (SRM-PDS 2014) of the 43rd International Conference on Parallel Processing Workshops (ICPP 2014), Tier **A**, Minneapolis, USA, September 9-12, 2014, pp. 37–44.

C24. M. Balasubramaniam, I. Banicescu, and F. M. Ciorba, "Robustness prediction and evaluation of divisible load scheduling on heterogeneous systems with uncertain perturbations", in Proceedings of the 13th International Symposium on Parallel and Distributed Computing (ISPDC 2014), Tier **C**, Porquerolles, France, June 23-27, 2014, pp. 170–177, IEEE, ISBN 9780769552651.

C23. N. Sukhija, B. Malone, S. Srivastava, I. Banicescu, and F. M. Ciorba, "Portfolio-based selection of robust dynamic loop scheduling algorithms using machine learning", in Proceedings of the 3rd International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning 2014) of the 28th IEEE International Parallel and Distributed Processing Symposium Workshops and PhD Forum (IPDPSW 2014), Tier **A**, Phoenix, USA, May 19-23, 2014, pp. 1638–1647, IEEE, ISBN 9781479941179. (**Best paper award.**)

C22. T. Hansen, F. M. Ciorba, A. A. Maciejewski, H. J. Siegel, S. Srivastava, and I. Banicescu, "Heuristics for robust allocation of resources to parallel applications with uncertain execution times in heterogeneous systems with uncertain availability", in Proceedings of the 2014 International Conference of Parallel and Distributed Computing (ICPDC 2014) of the World Congress on Engineering (WCE 2014), London, UK, July 2-4, 2014, pp. 535–541, Sponsor: International Association of Engineers (IAENG), ISBN 9789881925275. (**Best paper award.**)

C21. M. Balasubramaniam, I. Banicescu, and F. M. Ciorba, "Scheduling data parallel workloads - a comparative study of two common algorithmic approaches", in Proceedings of the 9th International Workshop on Scheduling and Resource Management for Parallel and Distributed Systems (SRMPDS 2013) of the 42nd International Conference on Parallel Processing Workshops (ICPP 2013), Tier **A**, Lyon, France, October 1-4, 2013, pp. 798–807, IEEE, ISBN 9780769551173.

C20. M. Balasubramaniam, I. Banicescu, and F. M. Ciorba, "Analyzing the robustness of scheduling algorithms using divisible load theory on heterogeneous systems", in Proceedings of the 12th International Symposium on Parallel and Distributed Computing (ISPDC 2013), Tier **C**, Bucharest, Romania, June 27-30, 2013, pp. 45–52, IEEE, ISBN-13 9780769550183.

C19. S. Srivastava, B. Malone, N. Sukhija, I. Banicescu, and F. M. Ciorba, "Predicting the flexibility of dynamic loop scheduling using an artificial neural network", in Proceedings of the 12th International Symposium on Parallel and Distributed Computing (ISPDC 2013), Tier **C**, Bucharest, Romania, June 27-30, 2013, pp. 3–10, IEEE, ISBN-13 9780769550183.

C18. N. Sukhija, I. Banicescu, S. Srivastava, and F. M. Ciorba, "Evaluating the flexibility of dynamic loop scheduling on heterogeneous systems in the presence of fluctuating load

using SimGrid", in Proceedings of the 14th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC 2013) of the 27th IEEE International Parallel and Distributed Processing Symposium Workshops and PhD Forum (IPDPSW 2013), Tier **A**, Boston, USA, May 20-24, 2013, pp. 1429–1438, IEEE, ISBN 9780769549798.

C17. S. Srivastava, N. Sukhija, I. Banicescu, and F. M. Ciorba, "Analyzing the robustness of dynamic loop scheduling for heterogeneous computing systems", in Proceedings of the 11th International Symposium on Parallel and Distributed Computing (ISPDC 2012), Tier **C**, Munich, Germany, June 25-29, 2012, pp. 156–163, IEEE, ISBN 9781467325998.

C16. M. Balasubramaniam, N. Sukhija, F. M. Ciorba, I. Banicescu, and S. Srivastava, "Towards the scalability of dynamic loop scheduling techniques via discrete event simulation", in Proceedings of the 13th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC 2012) of the 26th IEEE International Parallel and Distributed Processing Symposium Workshops and PhD Forum (IPDPSW 2012), Tier **A**, Shanghai, China, May 21-25, 2012, pp. 1343–1351, IEEE, ISBN 9781467309745.

C15. F. M. Ciorba, T. Hansen, S. Srivastava, I. Banicescu, A. A. Maciejewski, and H. J. Siegel, "A combined dual-stage framework for robust scheduling of scientific applications in heterogeneous environments with uncertain availability", in Proceedings of the 21st International Heterogeneity in Computing Workshop (HCW 2012), Tier **B**, of the 26th IEEE International Parallel and Distributed Processing Symposium Workshops and PhD Forum (IPDPSW 2012), Tier **A**, Shanghai, China, May 21-25, 2012, pp. 193–207, IEEE, ISBN 9781467309745.

C14. S. Srivastava, I. Banicescu, F. M. Ciorba, and W. E. Nagel, "Enhancing the functionality of a GridSim-based scheduler for effective use with large-scale scientific applications", in Proceedings of the 10th International Symposium on Parallel and Distributed Computing (ISPDC 2011), Tier **C**, Cluj-Napoca, Romania, July 6-8, 2011, pp. 86–93, IEEE, ISBN 9781457715365. (**Best paper award.**)

C13. S. Srivastava, F. M. Ciorba, and I. Banicescu, "Employing a study of the robustness metrics to assess the reliability of dynamic loop scheduling", in Proceedings of the Student Research Symposium (SRS) of the 17th IEEE High Performance Computing Conference (HiPC 2010), Tier **A**, Goa, India, December 19-22, 2010, 5 pages, IEEE, ISBN 9781424485185.

C12. F. M. Ciorba, S. Groh, and M. F. Horstemeyer, "Parallelizing discrete dislocation dynamics simulations on multi-core systems", in Proceedings of the Workshop on Tools for Program Development and Analysis in Computational Science of the 10th International Conference on Computational Science (ICCS 2010), Tier **A**, Amsterdam, The Netherlands, May 31-June 2, 2010, Procedia Computer Science, 1:1, May 2010, pp. 2135-2143, ISSN 18770509.

C11. S. Srivastava, I. Banicescu, and F. M. Ciorba, "Investigating the robustness of adaptive dynamic loop scheduling on heterogeneous computing systems", in Proceedings of the 11th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC 2010) of the 24th IEEE International Parallel and Distributed Processing Symposium Workshops and PhD Forum (IPDPSW 2010), Tier **A**, Atlanta, USA, April 19-23, 2010, pp. 1-8, IEEE, ISBN 9781424465330.

C10. I. Banicescu, F. M. Ciorba, and R. L. Cariño, "Towards the robustness of dynamic loop scheduling on large-scale heterogeneous distributed systems", in Proceedings of the 8th

International Symposium on Parallel and Distributed Computing (ISPDC 2009), Tier **C**, Lisbon, Portugal, July 1-3, 2009, pp. 129–132, IEEE, ISBN 9780769536804.

C9. F. M. Ciorba, I. Riakiotakis, T. Andronikos, A. T. Chronopoulos, and G. Papakonstantinou, "Optimal Synchronization Frequency for Dynamic Pipelined Computations on Heterogeneous Systems", in Proceedings of the 9th IEEE International Conference on Cluster Computing (Cluster 2007), Tier **A**, Austin, USA, September 17-20, 2007, pp. 410-415, IEEE, ISBN 9781424413874.

C8. I. Riakiotakis, F. M. Ciorba, T. Andronikos, and G. Papakonstantinou, "Self-adapting scheduling for tasks with dependencies in stochastic environments", in Proceedings of the Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2006) of the 8th IEEE International Conference on Cluster Computing (CLUSTER 2006), Tier **A**, Barcelona, Spain, September 25-28, 2006, pp. 1-8, IEEE, ISBN 9781424403271.

C7. F. M. Ciorba, T. Andronikos, I. Riakiotakis, A. T. Chronopoulos, and G. Papakonstantinou, "Dynamic multi phase scheduling for heterogeneous clusters", in Proceedings of the 20th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2006), Tier **A**, Rhodes, Greece, April 25-29, 2006, pp. 10-18, IEEE, ISBN 9781424400546.

C6. F. M. Ciorba, T. Andronikos, I. Drositis, and G. Papakonstantinou, "Reducing the communication cost via chain pattern scheduling", in Proceedings of the 4th IEEE Conference on Network Computing and Applications (NCA 2005), Tier **A**, Cambridge, USA, July 27-29, 2005, pp. 186–196, IEEE, ISBN 9781467322140.

C5. F. M. Ciorba, T. Andronikos, and G. Papakonstantinou, "Adaptive cyclic scheduling of nested loops", in Proceedings of the 7th Hellenic European Research on Computer Mathematics and its Applications (HERCMA 2005), Athens, Greece, September 22-24, 2005, 3 pages, ed. E. A. Lipitakis, LEA Publishers, Hellas, ISBN 9608727588.

C4. T. Andronikos, F. M. Ciorba, P. Theodoropoulos, D. Kamenopoulos, and G. Papakonstantinou, "Code generation for general loops using methods from computational geometry", in Proceedings of the 30th International Conference on Parallel and Distributed Computing and Systems (PDCS 2004) of the International Association of Science and Technology for Development (IASTED), Cambridge, USA, November 9-11, 2004, pp. 348-353, ed. T. Gonzales, ACTA Press, ISBN 0889864217.

C3. F. M. Ciorba, T. Andronikos, D. Kamenopoulos, P. Theodoropoulos, and G. Papakonstantinou, "Simple code generation for special UDLs", in Proceedings of the 1st Balkan Conference in Informatics (BCI 2003), Thessaloniki, Greece, November 21-23, 2003, pp. 466-475, ed. Yannis Manolopoulos and Paul Spirakis, Publishing Center of TEI of Thessaloniki, Greece, ISBN 9602870451.

C2. T. Andronikos, M. Kalathas, F. M. Ciorba, P. Theodoropoulos, and G. Papakonstantinou, "An efficient scheduling of uniform dependence loops", in Proceedings of the 6th Hellenic European Research on Computer Mathematics and its Applications (HERCMA 2003), Athens, Greece, September 25-27, 2003, pp. 561-569, ed. E. A. Lipitakis, LEA Publishers, Hellas, Vol. 2, ISBN 9608727537.

C1. T. Andronikos, M. Kalathas, F. M. Ciorba, P. Theodoropoulos, G. Papakonstantinou, and P. Tsanakas, "Scheduling nested loops with the least number of processors", in Proceedings of the 21st International Conference on Applied Informatics (AI 2003) of the

International Association of Science and Technology for Development (IASTED), Innsbruck, Austria, February 10-13, 2003, pp. 713-718, ed. M. H. Hamza, ACTA Press, ISBN (CD) 0889863415.

PAPERS 'UNDER REVIEW' IN PEER-REVIEWED CONFERENCES/WORKSHOPS

CUR1. S. Pfennig, K. Feldhoff, F. M. Ciorba, M. Bielert, E. Franz, T. Ilsche, T. Reiher, and W. E. Nagel, "Simulation Models Verification for Resilient Communication on a Highly Adaptive Energy-Efficient Computer", submitted to the 24th High Performance Computing Symposium 2016 (HPC 2016) of the 2016 Spring Simulation Multi-Conference (SPRING SIM 2016), Pasadena, USA, April 3–6, 2016, *Under review.*

INVITED ACADEMIC PRESENTATIONS

IT9. "Performance Modeling and Optimization in High Performance Computing", invited talk in the 2016 Competence Center for Computational Sciences Research Seminar (online program), at the University of Basel, Switzerland, April 5, 2016.

IT8. "Modeling System Behavior: A Monitoring or a Big Data Challenge?", invited talk at the 8th Leogang 2016 HPC Workshop (online program), Leogang, Austria, February 28–March 3, 2016.

IT7. "To choose or not to choose a career in computer science", invited talk in the course "Anwendungen der Informatik/Applications of Computer Science" (online description) at University of Basel, Switzerland, October 12, 2015.

IT6. "Performance Optimization for Scientific Computing: From Theory to Applications", invited talk at the High Performance Computing Symposium at the University of Basel, Switzerland, October 09, 2014.

IT5. "Performance Optimization for Scientific Computing: From Theory to Applications", invited lecture at the Swedish Royal Institute of Technology (KTH), Stockholm, Sweden, February 07, 2014.

IT4. "Towards simulation-based prediction of performance and energy-efficiency of future parallel computing systems", invited seminar talk at Colorado State University (seminar announcement), Fort Collins, USA, November 22, 2013.

IT3. "Design of a trace-based discrete event simulation framework for hybrid parallel applications", invited talk at the 4th Leogang 2012 HPC Workshop (online program), Leogang, Austria, February 27, 2012.

IT2. "Enhancing self-scheduling algorithms via synchronization and weighting", invited talk at the 2nd Scheduling in Aussois Workshop (online program), Aussois, France, May 19, 2008.

IT1. "Algorithms design for the parallelization of nested loops", invited talk at the Center for Advanced Vehicular Systems, Mississippi State University, Mississippi State, USA, September 24, 2007.

OTHER ACADEMIC PRESENTATIONS

T13. "Investigating the resilience of dynamic loop scheduling in heterogeneous computing systems", scientific paper presented at the 14th International Symposium on Parallel and Distributed Computing (ISPDC 2015) (online program), Limassol, Cyprus, July 01, 2015.

T12. "Analysis of parallel applications on a high performance–low energy computer", scientific paper presented at the 7th Workshop on UnConventional High Performance Computing 2014 (UCHPC 2014) of the 20th International Conference on Parallel Processing (Euro-Par 2014) (online program), Porto, Portugal, August 26, 2014.

T11. "Robustness prediction and evaluation of divisible load scheduling on heterogeneous systems with uncertain perturbations", scientific paper presented at the 13th International Symposium on Parallel and Distributed Computing (ISPDC 2014) (online program), Porquerolles, France, June 27, 2014.

T10. "Scheduling data parallel workloads - a comparative study of two common algorithmic approaches", scientific paper presented at the 9th International Workshop on Scheduling and Resource Management for Parallel and Distributed Systems (SRMPDS 2013) of the 42nd International Conference on Parallel Processing (ICPP 2013) (online program), Lyon, France, October 1, 2013.

T9. "Predicting the flexibility of dynamic loop scheduling using an artificial neural network", scientific paper presented at the 12th International Symposium on Parallel and Distributed Computing (ISPDC 2013) (online program), Bucharest, Romania, June 28, 2013.

T8. "Enhancing the functionality of a GridSim-based scheduler for effective use with large-scale scientific applications", scientific paper presented at the 10th International Symposium on Parallel and Distributed Computing (ISPDC 2011) (online program), Cluj-Napoca, Romania, July 6, 2011.

T7. "Parallelizing discrete dislocation dynamics simulations on multi-core systems", scientific paper presented at the Workshop on Tools for Program Development and Analysis in Computational Science of the 10th International Conference on Computational Science (ICCS 2010) (online program), Amsterdam, The Netherlands, June 1, 2010.

T6. "Optimal Synchronization Frequency for Dynamic Pipelined Computations on Heterogeneous Systems", scientific paper presented at the 9th IEEE International Conference on Cluster Computing (Cluster 2007) (online program), Austin, USA, September 17, 2007.

T5. "Self-adapting scheduling for tasks with dependencies in stochastic environments", scientific paper presented at the Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2006) of the 8th IEEE International Conference on Cluster Computing (CLUSTER 2006) (online program), Barcelona, Spain, September 28, 2006.

T4. "Dynamic multi phase scheduling for heterogeneous clusters", scientific paper presented at the 20th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2006) (online program), Rhodes, Greece, April 27, 2006.

T3. "Reducing the communication cost via chain pattern scheduling", scientific paper presented at the 4th IEEE Conference on Network Computing and Applications (NCA 2005), Cambridge, USA, July 28, 2005.

T2. "Adaptive cyclic scheduling of nested loops", scientific paper presented at the 7th Hellenic European Research on Computer Mathematics and its Applications (HERCMA 2005) (online program), Athens, Greece, September 24, 2005.

T1. "An Efficient Scheduling of Uniform Dependence Loops", scientific paper presented at the 6th Hellenic European Research on Computer Mathematics and its Applications (HER-CMA 2003) (online program), Athens, Greece, September 27, 2003.

POSTERS IN PEER-REVIEWED CONFERENCES

P5. M. Bielert, K. Feldhoff, F. M. Ciorba, S. Pfennig, E. Franz, and W. E. Nagel, "Verification of Resilient Communication Models for the Simulation of a Highly Adaptive Energy-Efficient Computer", presented at the 28th ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2015) (online), Tier **A**, Austin, USA, November 15-20, 2015.

P4. S. Ghiasvand, F. M. Ciorba, R. Tschüter, and W. E. Nagel, "Analysis of Node Failures in High Performance Computers Based on System Logs", presented at the 28th ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2015) (online), Tier **A**, Austin, USA, November 15-20, 2015.

P3. N. Sukhija, S. Srivastava, F. M. Ciorba, I. Banicescu, and B. Malone, "Employing machine learning for the selection of robust algorithms for the dynamic scheduling of scientific applications", presented at the 27th ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2014) (online), Tier **A**, New Orleans, USA, November 17-22, 2014.

P2. S. Srivastava, I. Banicescu, and F. M. Ciorba, "Optimizing the performance and robustness of dynamic scheduling for scientific applications with large number of time-steps", presented at the ACM Student Research Competition of the 23rd ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 2010) (online), Tier **A**, New Orleans, USA, November 13-15, 2010.

P1. F. M. Ciorba, I. Riakiotakis, T. Andronikos, A. T. Chronopoulos, and G. Papakonstantinou, "Studying the impact of synchronization frequency on scheduling tasks with dependencies in heterogeneous systems", presented at and published in the Proceedings of the 16th International Conference on Parallel Architectures and Compilation Techniques (PACT 2007) (online), Tier **A**, Brasov, Romania, September 15-19, 2007, pp. 403, IEEE, ISBN 9780769529448.

TEACHING

Class **Computer Architecture and Operating Systems** (undergraduate level)
University of Basel, Switzerland
Lecturer, Fall 2015
>   Prepared and gave lectures for the Operating Systems part of the course.
>   Joint course with Corinna Schmitt.

Class **Operating Systems** (undergraduate level)
National Technical University of Athens, Greece
Teaching Assistant, Fall 2003, Fall 2004, Fall 2005, Fall 2006, Fall 2007
>   Gave lectures related to class and laboratory exercise topics.
>   Designed exercises to facilitate understanding of theoretical concepts.
>   Supervised laboratory sessions and examinations.
>   Graded written exams and laboratory exercises.

Class **Operating Systems Laboratory** (undergraduate level)

National Technical University of Athens, Greece

Teaching Assistant, Spring 2004, Spring 2005, Spring 2006, Spring 2007

Gave lectures related to class and laboratory exercise topics.

Designed exercises to facilitate understanding of theoretical concepts.

Supervised laboratory sessions and examinations.

Graded written exams and laboratory exercises.

CONFERENCE BOOTH EXHIBITIONS

- Organizer of the participation of and exhibitor for Technische Universität Dresden, Dresden, Germany. 27th ACM/IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC 2014). New Orleans, USA, November 17-20, 2014.

- Co-organizer of the participation of and exhibitor for Technische Universität Dresden, Dresden, Germany. 26th ACM/IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC 2013). Denver, USA, November 18-21, 2013.

- Exhibitor for Technische Universität Dresden, Dresden Germany. 24th ACM/IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC 2011). Seattle, USA, November 12-18, 2011.

- Exhibitor for Mississippi State University, Mississippi State, USA. 22th ACM/IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC 2009). Portland, USA, November 14-20, 2009.

PROFESSIONAL AFFILIATIONS

- ACM (Association for Computing Machinery) and ACM's SIGSIM, SIGHPC, SIGHPC, SIGCOMM

- IEEE (Institute of Electrical and Electronics Engineers) and IEEE's Computer Society

- SPEEDUP (Swiss forum for Grid and High Performance Computing) Society (online)

- Swiss Informatics Society

ADDITIONAL EDUCATION

- 03/2015: Two-day career development course on *"Reflecting Leadership"*, lecturer Rolf Koerber, organized at the Technische Universität Dresden (TU Dresden) via the Center for Advancing Electronics Dresden (cfaed) Cluster of Excellence, Germany.

- 03/2014: Two-day career development course on *"Leadership in Science and Teams"*, lecturer Rolf Koerber, organized at the Technische Universität Dresden (TU Dresden) via the Center for Advancing Electronics Dresden (cfaed) Cluster of Excellence, Germany.

- 07/2010: Full day tutorial on *"DOE Advanced CompuTational Software (ACTS) Collection"*, at SciDAC 2010: Scientific Discovery through Advanced Computing Conference, organized at the University of Tennessee at Chattanooga (UTC), USA.

- 05/2009: Full day tutorial on *"Parallel Performance Evaluation Tools for HPC Systems"*, at ICCS 2009: 9th International Conference on Computational Science, Baton Rouge, USA.

- 06/2006: Seminar on *"Advanced Issues in Grid Technologies"*, organized by the Greek Research & Technology Network in collaboration with the Computing Systems Laboratory of the National Technical University of Athens, Greece.

- 02/2003-06/2003: Postgraduate course on *"Biomedical Engineering"*, National Technical University of Athens, Greece (Grade: 10/10).

- 10/2002-02/2003: Postgraduate course on *"Web Engineering"*, National Technical University of Athens, Greece (Grade: 10/10).

- 10/2002-02/2003: Postgraduate course on *"Advanced Issues of Natural Language Processing"*, National Technical University of Athens, Greece (Grade: 9/10).

- 10/2002-02/2003: Postgraduate course on *"Network Optimization Methods"*, National Technical University of Athens, Greece (Grade: 7/10).

- 10/2002-03/2003: Postgraduate course on *"Mobile Telecommunication Systems"*, National Technical University of Athens, Greece (Grade: 10/10).

- 03/2002-06/2002: Postgraduate course on *"Parallel Processing Systems"*, National Technical University of Athens, Greece (Grade: 10/10).