

CURRICULUM VITAE

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RESEARCH INTERESTS

I am interested in the design and evaluation of large-scale distributed computer systems with application in e-Science and in virtual environments. I have so far had the chance to characterize Grid and Peer-to-Peer (P2P) systems [6,8-10,12,22], to build performance evaluation models and tools for such environments [3,13,16-18], and to work on resource management solutions for Grid and P2P systems [1,4,5,7,11,13,14,17-21]. I am currently working on performance evaluation and on resource management in Grids [24,25], and on massively multi-user virtual environments [2,26]. I am looking forward for opportunities to build upon these research activities.

EDUCATION

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|--|---|
| Ph.D. in Computer Science
TU Delft, NL
2004 – October 2008 (<i>expected</i>) | <ul style="list-style-type: none">• PhD Thesis: Efficient Mechanisms for Grid Inter-Operation; Supervisor: Assistant Professor Dick Epema (TU Delft). Promoter: Professor Henk Sips (TU Delft). |
| M.Sc. in Computer Science
UPB, RO, Supelec, FR (co-tutor)
2003 –2004 | <ul style="list-style-type: none">• M.Sc. thesis: design of a hybrid peer-2-peer/hierarchical grid monitoring architecture. Supervisors: Professor Stephane Vialle (Supelec) and Professor Nicolae Tapus (UPB). GPA: 10.00/10.00 (100%).• MAJOR: Advanced Computer Architectures. |
| B.Sc. in Computer Science /
Computer Engineer
UPB, RO, Supelec, FR (co-tutor)
1998 – 2003 | <ul style="list-style-type: none">• Engineering diploma thesis: <i>Parallelization and Grid Integration of a Mobile Robotics Application</i>. Supervisors: Stephane Vialle (Supelec) and Nicolae Tapus (UPB). GPA: 9.27/10.00 (92.7%).• MAJOR: Computer Science and Engineering. |

ACADEMIC EXPERIENCE

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|-----------------------------|--|
| Research Internships | <ul style="list-style-type: none">• Institute of Computer Science, University of Innsbruck, AT
<i>Research Exchange, host: Thomas Fahringer</i> Summer 2008• Computer Sciences Dept., University of Wisconsin-Madison, USA
<i>Research Intern, host: Miron Livny/Condor Project</i> Summer 2006
Topics: Mechanisms for inter-operating large-scale distributed computing systems [7];
Workload characterization for a build-and-test environment [10].• Supelec of Metz, France
<i>Researcher, host: Stephane Vialle</i> Summer 2005
Topic: Monitoring resources and middleware in grids [18].• Supelec of Metz, France
<i>Engineering diploma project, host: Stephane Vialle</i> Summer 2004 |
| Research Projects | <ul style="list-style-type: none">• THE GRID WORKLOADS ARCHIVE – The primary purpose of the Grid Workloads Archive is to provide (anonymized) workload traces from grid environments for research purposes (http://gwa.ewi.tudelft.nl/). PI / Main contact. With D. Epema, H. Li, etc.• GRENCHMARK/SERVMARK – a flexible framework for Grid performance evaluation using synthetic workloads (http://grenchmark.st.ewi.tudelft.nl/). Showed how GrenchMark can be effectively used to analyze, test, and compare grid settings. Extended for distributed testing, under the name of SERVMARK; Globus Incubator Project since 2006 (http://dev.globus.org/wiki/Incubator/ServMark). PI / Main contact. With D. Epema etc. |

ACADEMIC EXPERIENCE (CONT'D.)

Research Projects (cont'd.)

- KOALA – a grid scheduler capable of co-allocation, deployed in real grid environments (<http://www.st.ewi.tudelft.nl/koala/>). Helped designing testing procedures, and used GRENCHMARK to test KOALA. As a result, KOALA has been made available to a community of over 200 researchers (the VL-e community, NL). With H. Mohamed, D. Epema, etc.
- 2FAST – a protocol for collaborative peer-to-peer file-sharing; this project now provides the data management layer for the I-Share Tribler project (<http://tribler.org/>). Co-designed the 2FAST protocol. Co-PI. With P. Garbacki, etc.
- MULTIPROBE – a tool for large-scale network measurements. Co- designed the framework, performed the largest measurement of a BitTorrent-based network to date. Co-PI / Main contact. (<http://multiprobe.ewi.tudelft.nl>) With P. Garbacki, J. Pouwelse, D. Epema.

AWARDS AND FELLOWSHIPS

- Best paper nomination at SuperComputing, Nov 2007 (work on grid resource management).
- Third Place ACM SRC at SuperComputing, Nov 2007 (work on experimental performance evaluation).
- Best paper award from IEEE P2P 2006 Conference, Jun 2006 (work on collaborative peer-to-peer networks).
- Werner von Siemens Excellence Award in Postgraduate Through-going Study, Siemens AG, Oct 2004 (work on monitoring large-scale distributed systems).
- Research scholarships from CoreGRID EU FP6 NoE (2008), and the ACI-GRID ARGE project (2003 and 2004).
- Travel grants from ACM, IEEE TCSC, and AAAI to participate in SC07, Grid07, and PLANET01, respectively.
- Honors (top 1%) student scholarship, Politehnica University of Bucharest, 2003—2004.
- Merit (top 1-5%) and honorary (top 5-10%) study scholarships, Politehnica University of Bucharest, 1998—2003.

SELECTED PUBLICATIONS

Grid Computing systems

Summary Journal/book: 2 x journal, 2 x book chapter.

Conference: 1 x HPDC, 2 x SC, 3 x Grid, 2 x CCGrid, 2 x Euro-Par, 1 x JSSPP, etc.

- [1] A. Iosup, D. Epema, T. Tannenbaum, M. Farrellee, and M. Livny, *Inter-Operating Grids through Delegated MatchMaking*, In the Journal of Scientific Programming, Special Edition on Best Paper Award at SuperComputing 2007, IOS Press, 2008, DOI 10.3233/SPR-2008-0246, (in print, **journal**).
- [2] V. Nae, A. Iosup, S. Podlipnig, R. Prodan, T. Fahringer, *Efficient Management of Data Center Resources for Massively Multiplayer Online Games*. In the ACM/IEEE SuperComputing Conference on High Performance Networking and Computing (SC'08), Nov 2008 (acceptance rate **20%**).
- [3] C. Stratan, A. Iosup, and D. Epema, *A Performance Study of Grid Workflow Engines*, In the IEEE/ACM International Conference on Grid Computing (Grid 2008), Tsukuba, JP, Sep 2008 (acceptance rate **19%**).
- [4] A. Iosup, O. Sonmez, and D. Epema, *DGSim: Comparing Grid Resource Management Architectures Through Trace-Based Simulation*, In Euro-Par 2008, Aug 2008 (acceptance rate **30%**).
- [5] A. Iosup, O. Sonmez, S. Anoep, and D. Epema. *The performance of bags-of-tasks in large-scale distributed systems*. In ACM/IEEE Int'l. Symposium on High-Performance Distributed Computing (HPDC-17 2008), pages 97–108, Jun 2008 (acceptance rate **17%**).
- [6] A. Iosup, H. Li, M. Jan, C. Dumitrescu, S. Anoep, L. Wolters, and D. Epema, *The Grid Workloads Archive*, Future Generation Computer Systems, 24(7), pp. 672—686, Feb 2008. (**journal**)
- [7] A. Iosup, D. Epema, T. Tannenbaum, M. Farrellee, and M. Livny, *Inter-Operating Grids through Delegated MatchMaking*, In the ACM/IEEE SuperComputing Conference on High Performance Networking and Computing (SC'07), Nov 2007 (acceptance rate **20%**). **Nominated for Best Paper Award.**
- [8] A. Iosup, M. Jan, O. Sonmez, and D. Epema, *On the Dynamic Resource Availability in Grids*, the IEEE/ACM International Conference on Grid Computing (Grid 2007), IEEE Computer Society Press, pp. 26—33, Sep 2007 (acceptance rate **22%**).
- [9] A. Iosup, M. Jan, O. Sonmez, and D. Epema, *The Characteristics and Performance of Groups of Jobs in Grids*, EuroPar 2007, Springer Verlag, ser. LNCS, vol. 4641, pp. 382—393, Aug 2007. (acceptance rate **25%**)
- [10] A. Iosup, D. Epema, P. Couvares, A. Karp, and M. Livny, *Build-and-Test Workloads for Grid Middleware: Problem, Analysis, and Applications*. In CCGrid'07, IEEE Computer Society Press, pp.205—213, May 2007. (acceptance rate **27%**).

Grid Computing systems (cont'd.)

- [11] C. Dumitrescu, [A. Iosup](#), O. Sonmez, H. Mohamed, and D. Epema, Virtual Domain Sharing in e-Science based on Usage Service Level Agreements, in Towards Next Generation Grids, T. Priol and M. Vanneschi (Eds.), Springer Verlag, CoreGRID series on Grid Computing, pp. 15—26, May 2007, ISBN: 978-0-387-72811-7. (**book chapter**)
- [12] [A. Iosup](#), C. Dumitrescu, D. Epema, H. Li, and L. Wolters, *How are Real Grids Used? The Analysis of Four Grid Traces and Its Implications*. In the IEEE/ACM International Conference on Grid Computing (Grid 2006), IEEE Computer Society Press, pp. 262—269. Sep 2006. (acceptance rate **18%**)
- [13] [A. Iosup](#) and D. Epema, *GrenchMark: A Framework for Analyzing, Testing, and Comparing Grids*, In CCGrid'06, IEEE Computer Society Press, pp. 313—320, May 2006. (acceptance rate **25%**)
- [14] [A. Iosup](#), P. Garbacki, D. Epema, *Provisioning and Scheduling Resources for World-Wide Data-Sharing Services*, In e-Science, IEEE Computer Society Press, pp.85—93, Dec 2006.
- [15] J. Bustos-Jimenez, D. Caromel, M. Leyton, [A. Iosup](#), *The Rocking Chair and the Grid: Balancing Across Institutional Clusters*, Proc. of the 2nd CoreGRID Workshop on Integrated Research in Grid Computing, Jun 2006.
- [16] [A. Iosup](#), D. Epema, C. Franke, A. Papispyrou, L. Schley, B. Song, R. Yahyapour, *On Grid Performance Evaluation using Synthetic Workloads*, In JSSPP'06, held in conjunction with SIGMETRICS'06, E. Frachtenberg and U. Schwiegelshohn (Eds.), Springer Verlag, LNCS, vol. 4376, pp. 232—255, Jun 2006.
- [17] [A. Iosup](#), J.Maassen, R.V.van Nieuwpoort, and D. Epema, *Synthetic Grid Workloads with Ibis, KOALA, and GrenchMark*, in Integrated Research in Grid Computing, S. Gorlatch and M. Danelutto (Eds.), Springer Verlag, CoreGRID series on Grid Computing, Nov 2005, ISBN: 978-0-387-47656-8. (**book chapter**)
- [18] [A. Iosup](#), N. Tapus, S. Vialle. *A monitoring architecture for control grids*, In Advances in Grid Computing – the European Grid Conference (EGC'05), Peter M.A. Sloot, Alfons G. Hoekstra, Thierry Priol, Alexander Reinefeld, and Marian Bubak (Eds.), Springer Verlag, LNCS Vol. 3470, pp.922—31, Dec 2005.

Peer-to-Peer systems

Summary Journal/book: 1 x journal.
Conference: 1 x P2P, 1 x IPTPS, etc.

- [19] J.A. Pouwelse, P. Garbacki, J. Wang, A. Bakker, J. Yang, [A. Iosup](#), D. Epema, M. Reinders, M. van Steen, and H.J. Sips, *Tribler: A social-based peer-to-peer system*, Concurrency and Computation: Practice and Experience, 20(2): 127-138, 2008 (**journal**).
- [20] P. Garbacki, [A. Iosup](#), D. Epema, M. van Steen, *2Fast: Collaborative downloads in P2P networks*, In The Sixth IEEE International Conference on Peer-to-Peer Computing (P2P'06), IEEE Computer Society Press, pp. 23—30, Sep 2006. (acceptance rate **21%**; **Best Paper Award**)
- [21] J. Pouwelse, P. Garbacki, J. Wang, A. Bakker, J. Yang, [A. Iosup](#), D. Epema, M. Reinders, M. van Steen, H. Sips. *Tribler: A Social-Based Peer-to-Peer System*. In the 5th Int'l Workshop on Peer-to-Peer Systems (IPTPS'06), Santa Barbara, CA, USA, February 2006. (acceptance rate **27%**)
- [22] [A. Iosup](#), P. Garbacki, J.A. Pouwelse, D. Epema. *Correlating topology and path characteristics of overlay networks and the Internet*. In the 6th International Workshop on Global and Peer-to-Peer Computing (GP2PC'2006), held in conjunction with IEEE CCGrid'06, IEEE Computer Society Press, May 2006.

Other publications

- [23] [A. Iosup](#), A.L. Varbanescu, T. Ionescu, N. Tapus. *Gaming for Knowledge --- Curriculum on Programming Fundamentals and Technologies*. In Proceedings of the Fourth International Conference Internet-Education-Science (IES'04), 5—9, Oct 2004. Research area: **games for under-graduate university courses**.

Papers under submission or preparation

- [24] [A. Iosup](#), D. Epema, *GrenchMark: a framework for testing large-scale distributed computing systems*, under submission at Performance Evaluation (**journal**). Research areas: workload analysis, performance evaluation.
- [25] [A. Iosup](#), C. Stratan, I. Raicu, I. Foster. *Evaluating the Performance of Grid Workflow Engines*, under preparation. Research area: experimental performance evaluation.
- [26] [A. Iosup](#), V. Nae, R. Prodan, T. Fahringer, *Performance issues in managing grid resources for massively multiplayer online games*, under preparation. Research areas: resource management, **massively multi-user virtual environments (massively multiplayer online games)**.

For a complete list of publications please visit <http://www.pds.ewi.tudelft.nl/~iosup/index.html> .

SELECTED TALKS (talks related to conference papers *not* included)

- [1] *Inter-Operating Grids with Delegated MatchMaking*, Research Visit IBM, Nov 2007. Also in Research Visit at U. Innsbruck, AT (Oct 2007), in CoreGRID Workshop/Open Grid Forum Conference 20, Manchester, UK, (May 2007); in Distributed Protocols Symposium, University of Chile, Santiago, CL (May 2007); in EU-NCIT/EGEE Grid Initiative Summer School, Politehnica University of Bucharest, RO (Jul 2007).
- [2] *The Grid Workloads Archive*, In the ASCI Conference, NL, Jun 2007. Also in Research Visit at U. Innsbruck, AT (Oct 2007).
- [3] *ServMark : A Hierarchical Architecture for Testing Grids*, in CoreGRID/UDP Distributed Systems Symposium, University Diego Portales, Santiago, CL, May 2007.
- [4] *GrenchMark: A Framework for Analyzing, Testing, and Comparing Grids*, In the ASCI Graduate School Course A9 (Spring 2007), Delft University of Technology, Delft, NL, May 2007.
- [5] *Resource and Test Management in Grids with Koala and GrenchMark*, In The VL-e Rapid Prototyping for e-Science Workshop, Amsterdam, NL Jun 2006. Also in the EU-NCIT/EGEE Grid Initiative Summer School, Politehnica University of Bucharest, RO (Jul 2006).

For a complete list of talks please visit <http://www.pds.ewi.tudelft.nl/~iosup/index.html> .

OTHER PROFESSIONAL ACTIVITIES

Project Grants

- **EU-NCIT**, *NCIT leading to EU IST excellency*, Integrating and Strengthening the European Research Area, call Promotion of co-operation with Associated Candidate Countries: Reinforcement of the Associated Candidate Countries' Research Capacities, FP6-2004-ACC-SSA-2. **Period**: 2004—2006. **Position**: co-wrote the proposal's technical part, currently project collaborator. **Web**: <https://euncit.hpc.pub.ro> **Value**: **EUR 1 million**.
- **Microsoft Gaming for Knowledge** – *Curriculum on Programming Fundamentals and Technologies*, Microsoft Research Grant. **Period**: 2003—2005. **Position**: **co-PI, WP leader**.
- **MON-I**, *Distributed Monitoring of Middleware and Applications in the National Grid Infrastructure*, INFOSOC, Romania. **Period**: 2004—2005. **Position**: co-wrote the proposal's technical part, collaborator.
- **MON-R**, *Distributed Monitoring of Resources in the National Grid Infrastructure*, Relansin, Romania. **Period**: 2004—2005. **Position**: co-wrote the proposal's technical part, collaborator.
- **AEROLINK**, *High Performance Network for Aeronautical Research*, INFOSOC, Romania. **Period**: 2004—2005.

Workshops, Summer Schools, etc.

- Co-Organizer/Coordinator of training of the UPB Summer School in grid technology (**GridStart**), 2004—Present.
- Co-Organizer of the 13th and the 14th annual ASCI Computing Workshop (**GNARP**), 2006—2007.

Referee

- Journals: IEEE Trans. Par. Dist. Sys., Future Generation Comp. Sys., Journal of Grid Computing
- Conferences: ACM/IEEE HPDC, ICDCS, ACM/IEEE SuperComputing, IPDPS, EuroPar, IEEE Peer-to-Peer, IEEE Grid, IEEE CCGrid, HiPC, IEEE ISPA, etc.

Teaching

- Co-teaching the ASCI Graduate School Course A9 (Spring 2007);
- Teaching Assistant for four under-graduate courses, Faculty EEMCS, TU Delft: Distributed Algorithms (IN4150, year 4 out of 4), Distributed Systems II (IN4002, yr. 4/4), Distributed Systems (IN3140, yr. 3/4), and Literature Survey (IN3305, yr. 3/4) **Introduced gaming/MMOG elements in (graded) course assignments**;
- Teaching Assistant for four under-graduate courses, Faculty of Computer Science, Politehnica University of Bucharest, Romania: Parallel Computing Architectures (yr. 4/5), Computing Systems Structure (yr. 4/5), Software Engineering (yr. 3/5), Elements of Computer Graphics (yr. 3/5).
- Instructor for CISCO Networking Academy courses, for Academia CISCO UPB.

EXPERIENCE IN THE INDUSTRY

- Five years industry experience (software engineering, project management, consulting, programming)
- Commercial products: TransPower, TrafoMON (1x, 2x, 8x, Plus), TV Manager, Smugglers 2, Leaderz.

Computer Games Design and Development

2001 – Present

- Part-time, Remote collaborative environment.
- Design and/or develop three shareware computer games for Suntastic Software (Romania, <http://www.suntasticsoftware.com/>), and Niels Bauer Software Design (Germany, <http://www.nbsd.de/>).
- **Award-winning game design: Leaderz (country manager simulation), Smugglers II (space simulation/RPG), TV Tycoon (company manager simulation).**

Software Development and Engineering

Energy Industry

Romania

2001 – 2004

- Head of the Computing Systems Dept. (NOVA)
 - Coordinate department activity
 - Project management for software development
- Consultant/Software developer (ICEMENERG / SONERG / NOVA)
 - Feasibility reports and technical evaluations for software development
 - Design and develop software solutions

OTHER RELEVANT INFORMATION

Computer knowledge and skills

- Programming/scripting languages: C/C++, Java, (Object) Pascal, Python, Ruby.
- Parallel/distributed programming: MPI, RMI, RPC, pthreads.
- Operating systems: UNIX (Linux), Windows (flavors).
- Other skills: computer graphics (OpenGL, DirectX, SDL), software engineering (UML, Rational Rose).

Languages

- Romanian – native speaker.
- English – fluent/proficient in reading, writing and speaking. Experience in writing and translating general and technical documents. Five years working in English-speaking environments.
- French – reading: proficient for technical documents, writing: some knowledge, speaking: can manage daily situations. Six months working in French-speaking environments.

Professional Affiliations

- Dutch, Italian – some knowledge; reading: proficient for technical documents.
- Association of Computer Machinery (ACM);
- Institute of Electrical and Electronics Engineers (IEEE);
- **Independent Game Developers Association (IGDA).**

Hobbies

- **Video games design and development (since 1999);** also go, chess;
- Active sports - basketball, football, badminton, tennis, squash, ping pong;
- Refereeing: referee for NBB Rayon West (basketball referee E level diploma).

REFERENCES

Dr. Henk Sips

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Additional references are available upon request.