

Curriculum Vitae Dick H.J. Epema

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Date and place of birth 26 January 1956, Amsterdam, the Netherlands

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Positions

Current positions	<p>Professor of Computer Science, Distributed Systems (DS) Group, Delft University of Technology</p> <ul style="list-style-type: none"> • Head of the Section Distributed Systems • Research interests: distributed systems (big-data processing, scheduling, cooperative systems) • Teaching and supervision at the bachelor's, master's, and PhD levels • Leading research projects • Valorization of teaching and research • Chairing and organizing workshops and conferences • Mentoring junior faculty members 	2015-
Previous positions	<p>Assistant professor of Computer Science, Leiden University</p> <ul style="list-style-type: none"> • In 1981, in the middle of my PhD period, Computer Science was established as an independent discipline at Dutch universities. As I showed interest in it during my PhD, I was offered an assistant professorship in Computer Science. 	1983-1984
	<p>Assistant professor of Computer Science, Delft University of Technology</p> <ul style="list-style-type: none"> • Operating Systems Group (1984-1996) • Parallel and Distributed Systems Group (1996-1999) 	1984-1999
	<p>Associate professor of Computer Science, Delft University of Technology</p> <ul style="list-style-type: none"> • Parallel and Distributed Systems Group 	1999-2015
	<p>Part-time full professor of Computer Science in <i>Decentralized Distributed Systems, System Architecture and Networking Group</i>, Eindhoven University of Technology</p> <ul style="list-style-type: none"> • Teaching at the master's and PhDEng levels • Supervision of one PhD student • Contribution of a topic in both teaching (Cloud Computing) and research (resource management in distributed computing systems) that was not present in Eindhoven 	2011-2016
Visiting positions	<p>Visiting Scientist, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA</p> <ul style="list-style-type: none"> • Research in the application of expert systems to the performance management of large computer systems 	Jul 1987- Jul 1988
	<p>Visiting Scientist, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA</p> <ul style="list-style-type: none"> • Research in scheduling in multiprocessors 	Sept-Dec 1991

Visiting Lecturer, Department of Applied Sciences, KU Leuven, Belgium Course <i>Distributed Algorithms</i>	Oct-Dec 1992
Visiting Scientist, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA <ul style="list-style-type: none"> • Research in replication in distributed databases 	Jun-Sept 1998
Sabbatical University of California at Santa Barbara (UCSB) <ul style="list-style-type: none"> • Research in Online Social Networks 	Sept-Dec 2009

Education

Education	Highschool: Willem de Zwijgerlyceum, Bussum (gymnasium)	1968-1974
	BSc (“kandidaatsexamen”) Mathematics, Leiden University <ul style="list-style-type: none"> • Minors in physics and astronomy • With honors (cum laude) 	1974-1976
	MSc (“doctoraalexamen”) Mathematics, Leiden University <ul style="list-style-type: none"> • Major in algebraic geometry • Minor in Spanish • With honors (cum laude) • Teaching assistant 	1976-1979
	PhD Mathematics, Leiden University <ul style="list-style-type: none"> • Thesis subject in algebraic geometry • PhD thesis <i>Surfaces with Canonical Hyperplane Sections</i> • Promotor prof.dr. J.P. Murre • Leiden was then very prominent in algebraic geometry 	1979-1983
	MSc Computer Science, Delft University of Technology <ul style="list-style-type: none"> • In order to have a solid foundation in Computer Science after my switch from mathematics, I completed the master’s program in Computer Science (then still not divided in BSc and MSc) • Master’s thesis <i>A VM Performance Analyzer, Interpreter, and Advisor</i> (performed at IBM T.J. Watson Research Center) • Supervisor prof.dr.ir. W.L. van der Poel • With honors (cum laude) 	1984-1988

University Leadership and Management

Management of people	<p>Mentoring and co-assessing junior faculty</p> <ul style="list-style-type: none"> • Advising and coaching both junior faculty members of the PDS group <p>Supervision of PhD students and postdocs</p> <ul style="list-style-type: none"> • 16 PhD theses completed, 5 in progress (for names and topics, see under <i>Research</i>) • 12 postdocs (for names, see under <i>Research</i>) • Mentor of PhD students in the Graduate School of TU Delft <p>Member assessment committees</p> <ul style="list-style-type: none"> • Member of the assessment committee for a “Habilitation a Diriger des Recherches” at ENS Lyon/INRIA • Advisor Tenure, KTH, Sweden • Advisor Tenure, Nanyang Technical University, Singapore • Member Search Committee for an associate professor, VU Amsterdam • Advisor Tenure, University of Calgary, Canada • Member of the assessment committee for a “Habilitation a Diriger des Recherches” at INRIA Sophia Antipolis 	<p>2007-</p> <p>2010</p> <p>2012</p> <p>2012</p> <p>2013</p> <p>2013</p> <p>2016</p>
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Management of research	<p>Co-author of the self-assessment report of Computer Science research at TUD</p> <ul style="list-style-type: none"> • External research assessment at Dutch universities (“visitatie”) in 2003 (report written with W. Bronsvooort) <p>Member and Chairman of the NWO (Dutch National Science Foundation) VIDI Assessment Committee for the Exact Sciences</p> <ul style="list-style-type: none"> • VIDI grants are intermediate-level career-development grants • Chairman of the committee • Assessment and selection of proposals (astronomy, computer science, and mathematics) <p>Member of the Program Committee of the NWO program GLANCE</p> <ul style="list-style-type: none"> • Special program of NWO on large-scale parallel and distributed systems • Co-author of the call for proposals with H.E. Bal (VU) <p>Member of the NWO Assessment Committee Computer Science (“vrije competitie”)</p> <ul style="list-style-type: none"> • Grant scheme without restrictions on the research topic • Assessment and ranking of research proposals 	<p>2002-2003</p> <p>2003-2005</p> <p>2004-2005</p> <p>2004-2007</p> <p>2005-2007</p>

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- Member of the NWO Committee Investments “Middelgroot”**

 - Assessment and ranking of proposals for research equipment of up to €900,000

2010-2012
 - Member of the Review Committee** for the COrrrelator and Beamformer Application computing infrastructure for the Lofar Telescope (COBALT) at ASTRON (Dutch Research Institute for Radio Astronomy)

2013
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Education leadership

- Member and Chairman of the Education Committee Computer Science (Opleidingscommissie Technische Informatica)**

 - Advisory committee on educational matters composed of staff members and students
 - Chairman of the committee
 - Led the introduction of course evaluation with questionnaires before this was done at the TUD level
 - Initiated course evaluation sessions with students and teachers
 - Led the restructuring of the Computer Science curriculum because of the extension of the curriculum from 4 to 5 years
 - Co-authored the self-assessment report of Computer Science education at TU Delft for the external assessment of computer-science education at Dutch universities (“onderwijsvisitatie”)
 - Led the complete redesign of the Computer Science curriculum after the external assessment of computer-science education at Dutch universities in 1996

1991-2001

1995-2001

1992

1992

1994

1996

1997
 - Chairman of the Education Committee of the Research School ASCI**

 - The Advanced School for Computing and Imaging (ASCI) is a collaboration of Computer Science Departments of Dutch Universities on research and PhD Education
 - Main tasks are composing and evaluating the course program

2000-2006
 - Chairman of the MSc Examination Committee for the MSc Programs Computer Engineering and Embedded Systems**

 - Main task is judging whether students have satisfied all requirements for receiving their master’s degree

2006-2008
 - Member of the general Examination Committee of the Faculty EEMCS**

 - Main task is setting policies for holding exams and rules for approving individual course programs
 - Composed of the chairmen of the separate examination committees

2006-2008
 - Coordinator for TU Delft of the EIT ICTLabs MSc program *Cloud Computing and Services***

 - As of 2015, TUD will participate in this master’s program

2014-
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Member of the MSc Educational Board (MEB) Computer Science 2014-

- Defining the new two-track master's program in Computer Science
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Community Leadership and Service

General and Program Co-chair of the annual conference of the Dutch Research School ASCI	1998, 2008
Global Chair of the Topic Peer-to-Peer Systems of <i>Euro-Par</i>	2008
Initiator and Co-chair of the <i>Workshop on Large-scale Systems and Application Performance</i> (LSAP, in conjunction with <i>HPDC</i>)	2009-2011
General and Program Co-chair of the conference <i>Euro-Par</i> in Delft (with H.-X. Lin and H.J. Sips) <ul style="list-style-type: none"> • Web site at http://europar2009.ewi.tudelft.nl 	2009
Program Vice-Chair Performance Modeling and Evaluation of the <i>10th IEEE/ACM Int'l Symp. on Cluster, Cloud and Grid Computing</i> (CCGrid)	2010
General Co-chair of the <i>10th IEEE Int'l Conf. on P2P Computing</i> in Delft (with H.J. Sips) <ul style="list-style-type: none"> • Web site at http://p2p10.org 	2010
General Chair of the <i>21st ACM Symp. on High-Performance Parallel and Distributed Computing</i> (HPDC) in Delft: <ul style="list-style-type: none"> • Very large number of paper submissions for a European venue (140) • Very large number of attendees for a European venue (150) • Initiated the <i>HPDC</i> Achievement Award • Initiated with the PC Co-chairs a two-phase review process and author rebuttals • Helped in branding <i>HPDC</i> with a new web design that is still being used • Web site at http://www.hpdc.org/2012 	2012
General Chair of the <i>13th IEEE/ACM Int'l Symp. on Cluster, Cloud, and Grid Computing</i> (CCGrid) in Delft <ul style="list-style-type: none"> • 250 paper submissions • 150 attendees • Web site at http://www.ds.ewi.tudelft.nl/ccgrid2013 	2013
Program Co-chair of the <i>22nd ACM Symp. on High-Performance Parallel and Distributed Computing</i> (HPDC)	2013
Area Program Chair of <i>Supercomputing</i> for the area <i>Clouds and Distributed Computing</i>	2016

Membership of Steering Committees of Conferences

- *IEEE/ACM Int'l Symposium on Cluster, Cloud and Grid Computing (CCGrid)* 2010-
- *IEEE Int'l Conference on Peer-to-Peer Computing* 2010-2015
- *ACM Int'l Symposium on High-Performance Parallel and Distributed Computing (HPDC)* 2012-2016

Editorships

- Associate Editor *IEEE Transactions on Parallel and Distributed Systems* 2008-2014
- Associate Editor *IEEE Transactions on Cloud Computing* 2013-

Guest Editor

- Co-editor of the volume with the 20 best papers of the first 20 years of *HPDC* 2013
- Special issue of the *Journal on Cluster Computing* with the best papers of *HPDC'13* (with R. Figueiredo) 2014

Selected memberships of program committees

- *IFIP Symp. on Computer Performance Modeling, Measurement and Evaluation 2002*
- *IEEE/ACM Cluster Computing and the Grid (CCGrid) 2002, 2009, 2010 (Program Vice-Chair Performance Modeling and Evaluation), 2011, 2014, 2016*
- *IEEE Grid 2005, 2008, 2010*
- *ACM Symp. on High-Performance Distributed Computing (HPDC) 2006, 2008, 2009, 2011, 2013 (Program Co-Chair), 2014, 2015, 2016, 2017*
- *Int'l Conference on Distributed Computing Systems (ICDCS) 2007*
- *IEEE P2P Computing 2007, 2008, 2009, 2012*
- *Euro-Par 2007, 2008 (Global Chair topic Peer-to-Peer Systems)*
- *Int'l Workshop on Peer-To-Peer Systems (IPTPS) 2008*
- *Int'l Parallel and Distributed Processing Symposium (IPDPS) 2008*
- *Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), 2010, 2012-2016*
- *SuperComputing 2013*
- *MASCOTS 2015*

Reviewing for many conferences and journals (ACM, IEEE, etc)**Miscellaneous**

- Member of the Panel "On the Future of Parallel and Distributed Computing" at *HPDC 2011*

Research

Current research projects/funding	<p>Two Chinese Scholarship Council (CSC) PhD grants</p> <ul style="list-style-type: none"> • Two PhD students 2010-2015 • With A. Iosup (TUD/PDS) 2011-2015 <p>e-Infrastructure Virtualization for e-Science Applications 2011-2017</p> <ul style="list-style-type: none"> • With the VU University, the University of Amsterdam and companies • Project P20 of the national research program COMMIT • Leader of two Work Packages • TUD research: resource management and scheduling • TUD funding: €570,000 (2 PhD students and 1 post-doc) <p>DAS5 2014-2018</p> <ul style="list-style-type: none"> • NWO project with Leiden University, the University of Amsterdam, the VU, and ASTRON • Fifth-generation of the Distributed ASCI Supercomputer • Member Steering Committee • Equipment for computer-science research (6 clusters) • TUD funding: €103,000 from NWO (total funding €622,000) plus €75,000 from COMMIT and the Netherlands eScience Center (NLeSC)
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Previous research projects/funding	<p>CACTUS 2002-2004</p> <ul style="list-style-type: none"> • Part of the national research program BSIK • Research on ad-hoc mobile networks • TUD/PDS personnel: 1 post-doc <p>Two-Level Peer-to-Peer Systems 2002-2008</p> <ul style="list-style-type: none"> • NWO project on heterogeneous peer-to-peer systems • Project leader • TUD funding: €145,000 (1 PhD student) <p>CoreGRID 2004-2008</p> <ul style="list-style-type: none"> • EU FP6 Network of Excellence on grids (42 partners) • TUD funding: €97,000 (1 post-doc and 1 exchange researcher) <p>I-SHARE 2004-2009</p> <ul style="list-style-type: none"> • BSIK project with various universities and companies • Project leader for the PDS group and Work Package leader • Research on Peer-to-Peer systems, development of Tribler • TUD/PDS funding: €420,000 (1 PhD student, 1 post-doc, 1 programmer)

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| Virtual Lab for e-Science (VL-e) | 2004-2010 |
| <ul style="list-style-type: none"> • BSIK project with various universities and companies • Project leader for TUD • Research in grids • TUD/PDS funding: €600,000 (2 PhD students and 3 post-docs) | |
| Tribler Valorization | 2006-2008 |
| <ul style="list-style-type: none"> • BSIK project as an addition to I-SHARE • Project leader • Goal: the valorization of the Tribler peer-to-peer technology (see under Valorization for details) • TUD funding: €243,000 (2 business contact persons and 3 programmers) | |
| P2P-Fusion | 2006-2009 |
| <ul style="list-style-type: none"> • EU FP6 STREP on Peer-to-Peer systems • Project leader for TUD • With J.A. Pouwelse (TUD/PDS) • TUD funding: €522,000 (2 PhD students and 1 post-doc) | |
| DAS3 | 2006-2010 |
| <ul style="list-style-type: none"> • NWO project with Leiden University, the University of Amsterdam, and the VU • Third-generation DAS system with 5 clusters • Member Steering Committee • TUD funding: €180,000 (total funding €900,000) | |
| GUARD-G | 2007-2012 |
| <ul style="list-style-type: none"> • Project in the NWO GLANCE program with Leiden University on resource management in grids • Project leader • Total/TUD funding: € 450,000/285,000 (1 PhD student and 1 post-doc) | |
| P2P-NEXT | 2008-2012 |
| <ul style="list-style-type: none"> • EU FP7 IP on Peer-to-Peer Systems • With J.A. Pouwelse (TUD project leader) • TUD personnel: 6 PhD students, 2 postdocs and 4 programmers | |
| ALEAE | 2009-2010 |
| <ul style="list-style-type: none"> • Project with INRIA, France on failures in distributed systems • Project leader for TUD • Total budget: €86,000 | |
| QLectives | 2009-2013 |
| <ul style="list-style-type: none"> • EU FP7 IP on Peer-to-Peer Systems • With J.A. Pouwelse (TUD project leader) • TUD personnel: 4 PhD students and 3 postdocs | |
| COST Action complexHPC | 2009-2013 |
| <ul style="list-style-type: none"> • EU COST Action IC0805 on High-Performance Computing | |
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DAS4	<ul style="list-style-type: none"> • NWO project with Leiden University, the University of Amsterdam, the VU, and ASTRON • Fourth generation DAS system with 6 clusters • Member Steering Committee • TUD funding: €150,000 (total funding €900,000) 	2010-2014
RMAC (Resource Management Across Clouds)	<ul style="list-style-type: none"> • EIT ICTLabs project in the Cloud Action Line • Project leader • Partners: KTH (Sweden), INRIA and Institut Telecom (France), TUDelft and TU Eindhoven (the Netherlands) • TUD and TU/e funding: € 60,000 each 	2012
Current PhD students	<ul style="list-style-type: none"> • B.I. Ghit (MapReduce scheduling) • A. Ilyushkin (workflow scheduling, with A. Iosup) • A. Kuzmanovska (scheduling frameworks in datacenters, TU Eindhoven, with R.H. Mak) • Vincent van Beek (scheduling business-critical workloads in clouds, with A. Iosup) 	2011- 2013- 2013- 2015-
Previous PhD students	<ol style="list-style-type: none"> 1. J.F.C.M. de Jongh, currently with TNO <i>Share-Scheduling in Distributed Systems</i> 2. A.I.D. Bucur, currently with Philips Research <i>Performance Analysis of Processor Co-Allocation in Multicluster Systems</i> 3. H.H. Mohamed, currently with Flow Traders, Amsterdam <i>The Design and Implementation of the KOALA Grid Resource Management System</i> 4. P. Garbacki, currently with Pinterest, USA <i>Improving P2P Applications by Breaking the Architecture Symmetry</i> 5. A. Iosup, currently assistant professor in the PDS group <i>A Framework for the Study of Grid Inter-operation Mechanisms</i> 6. J.J.D. Mol, currently with ASTRON <i>Free-riding Resilient Video Streaming in Peer-to-Peer Networks</i> 7. O.O. Sonmez, currently with Huawei, Istanbul <i>Application-Oriented Scheduling in Multicluster Grids</i> 8. M. Meulpolder, currently with Getronics <i>Managing Supply and Demand of Bandwidth in Peer-to-Peer Communities</i> 9. M.N. Yigitbasi, currently with Netflix, USA <i>Understanding and Improving the Performance Consistency of Distributed Computing Systems</i> 10. R. Delaviz Aghbolah, currently with Cool Blue, Rotterdam <i>A Rubust Decentralized Reputation Mechanism for Peer-to-Peer Systems</i> 	2002 2004 2007 2008 2009 2010 2010 2011 2012 2013

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| 11. A.L. Jia | <i>Online Networks as Societies: User Behaviors and Contribution Incentives</i> | 2013 |
| 12. D. Gkorou, currently with Xomnia, Amsterdam | <i>Exploiting Graph Properties for Decentralized Reputation Systems</i> | 2014 |
| 13. Siqi Shen, currently with TU Delft | <i>Massivizing Networked Virtual Environments on Clouds</i> | 2015 |
| 14. M. Capotă, currently with Intel Labs, USA | <i>User Contribution in Peer-to-Peer Communities</i> | 2015 |
| 15. R. Petrocco, currently with Spotify | <i>Improving Peer-to-Peer Video Streaming</i> | 2016 |
| 16. Y. Guo, | <i>Distributed Heterogeneous Systems for Large-Scale Graph Processing</i> | 2016 |
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| Postdocs supervised | <ul style="list-style-type: none"> • H. Gautama (CACTUS, 2 years) 2002-2004 • J.A. Pouwelse (I-SHARE, 3 years) 2004-2007 • C. Dumitrescu (CoreGRID, 9 months) 2005-2006 • M. Jan (VL-e, 6 months) 2006-2007 • I. Haratcherev (P2P-Fusion, 2 years) 2006-2008 • J. Buisson (CoreGRID, 6 months) 2007 • H.H. Mohamed (VL-e and GUARD-G, 2 years) 2007-2009 • A. Iosup (VL-e, 10 months) 2008-2009 • S. Abrishami (visiting from University of Mashad, 6 months) 2009 • M. Gallat (visiting from ENS Lyon, 4 months) 2009-2010 • O.O. Sonmez (VL-e, 1.5 years) 2009-2011 • J. Rouzaud-Cornabas (visiting from ENS Lyon, 2 months) 2014 |
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| Keynote talks | <ul style="list-style-type: none"> • “Exploiting Heterogeneity in Parallel and Distributed Systems,” <i>Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms</i> (HeteroPar’09) Aug 2009 • “Peer-to-Peer File Sharing: Past!-Present-Future? A Delft View,” <i>10th IEEE Int’l Conf. on Peer-to-Peer Computing</i> Aug 2011 • “Twenty Years of Grid Scheduling Research and Beyond,” <i>12th IEEE/ACM Int’l Symp. on Cluster, Cloud and Grid Computing</i> (CCGrid) May 2012
(available at http://www.ds.ewi.tudelft.nl/epema/presentations) |
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| Inaugural lectures | <ul style="list-style-type: none"> • <i>Decentraliseer—en Beheers?</i>, Eindhoven University of Technology Nov 23, 2012
(text and slides (in Dutch) available at http://www.ds.ewi.tudelft.nl/epema/presentations) |
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- *Gedistribueerde Systemen: van Efficiëntie tot Vertrouwen*, May 27,
Delft University of Technology 2016
(text and slides (in Dutch) available at
<http://www.ds.ewi.tudelft.nl/epema/presentations>)
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Awards

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| <p>Best-paper award
 <i>6th IEEE Int'l Conference on Peer-to-Peer Computing</i>,
 for P. Garbacki, A. Iosup, D.H.J. Epema and M. van Steen,
 "2Fast: Collaborative Downloads in P2P Networks"</p> | 2006 |
| <p>Best-paper nomination
 <i>SuperComputing (SC07)</i>,
 for A. Iosup, D.H.J. Epema, T. Tannenbaum, M. Farrellee and M.
 Livny, "Inter-operating Grids through Delegated MatchMaking"</p> | 2007 |
| <p>Best-paper award
 <i>10th IEEE/ACM Int'l Symposium on Cluster, Cloud and Grid
 Computing (CCGRID10)</i>,
 for D. Kondo, B. Javadi, A. Iosup and D.H.J. Epema, "The Failure
 Trace Archive: Enabling Comparative Analysis of Failures in Diverse
 Distributed Systems"</p> | 2010 |
| <p>Best-paper award
 <i>5th Workshop on Many-Task Computing on Grids and Supercomputers
 (MTAGS)</i>,
 for B.I. Ghit, M.N. Yigitbasi and D.H.J. Epema, "Resource
 Management for Dynamic MapReduce Clusters in Multicluster
 Systems"</p> | 2012 |
| <p>Biggest impact award
 <i>5th Workshop on Many-Task Computing on Grids and Supercomputers
 (MTAGS)</i>,
 for A. Iosup, S. Ostermann, N. Yigitbasi, R. Prodan, Th. Fahringer and
 D.H.J. Epema, "Performance Analysis of Cloud Computing Services
 for MTC-Based Scientific Computing," <i>IEEE Trans. on Parallel and
 Distributed Systems</i>, Vol. 22, pp. 931-945, 2011.</p> | 2012 |
| <p>Best-paper award
 <i>IEEE 21st Int'l Symposium on Modeling, Analysis and Simulation of
 Computer and Telecommunication Systems (MASCOTS'13)</i>,
 for N. Yigitbasi, T. Willke, G. Liao and D.H.J. Epema, "Towards
 Machine Learning-Based Autotuning of MapReduce"</p> | 2013 |
| <p>Best-paper award
 <i>ACM Symposium on Applied Computing, Area Distributed Systems</i>,
 for R. Petrocco, M. Capota, J.A. Pouwelse and D.H.J. Epema, "Hiding
 User Content Interest while Preserving P2P Performance"</p> | 2014 |
| <p>Winner SCALE Challenge
 <i>IEEE/ACM Symposium on Cluster, Cloud and Grid Computing
 (CCGrid)</i>,
 for B. Ghit, M. Capota, T. Hegeman, J. Hidders, D.H.J. Epema and
 A. Iosup, "V for Vicissitude: The Challenge of Scaling Complex Big
 Data Workflows"</p> | 2014 |

Teaching

BSc courses	<ul style="list-style-type: none"> • <i>Computersystemen</i> (first year) • <i>Gedistribueerde Systemen</i> (third year) • <i>Operating Systems</i> (second year) • <i>BSc Seminar</i> (third year) 	<p>1988-2006 2003-2009 2010-2011 2016- 2014-</p>
MSc courses	<ul style="list-style-type: none"> • <i>Design and Implementation of Operating Systems</i> • <i>Distributed Systems</i> (in 2003 split up into <i>Gedistribueerde Systemen</i> and <i>Distributed Algorithms</i>) • <i>Distributed Algorithms</i> • Seminar <i>Peer-to-Peer Systems</i> (with J.A. Pouwelse) • <i>Cloud Computing</i> (with A. Iosup; also at TU Eindhoven, where the course is on the list of elective courses of all four “streams”) • <i>High-Performance Computing</i> 	<p>1986-1999 1989-2003 2003- 2008-2012 2012- 2016-</p>
MSc supervision	<ul style="list-style-type: none"> • Supervised about 80 master’s students • Selected master’s theses are available at http://www.ds.ewi.tudelft.nl/epema/teaching 	
PhD courses	<ul style="list-style-type: none"> • <i>Fundamentals and Design of Distributed Systems</i> as part of the course program of the Research School ASCI, coordinator (biennial) • <i>Grid Programming Models</i> as part of the course program of the Research School ASCI (biennial) 	<p>1998-2014 2007-2011</p>

Valorization¹

Valorization projects

- Very extensive **valorization of the Tribler P2P technology** has been done in the separate Tribler Valorization BSIK project, of which I was the project leader, with a total of 5 employees (see *Previous research projects*):
 - We visited dozens of companies, both in the Netherlands and abroad, to present and discuss this technology (broadcasting companies, set-top box manufacturers, Internet companies)
 - We created and released a special light-weight version of the Tribler P2P client for external use
 - We organized two workshops, one on the occasion of a Tribler release (May 2007), and one on the final evaluation of the valorization efforts (Oct 2008)
 - We taught a Tribler technical course (May 2008) with 30 attendees (from companies and other European P2P projects)
 - We wrote a survey of business models
 - One of the project members (Jacco Taal) founded a spin-off company called *Bitnomica* (<http://www.bitnomica.com>)
 - The Tribler software has been ported by Commodore and Pioneer (partners in the P2P-NEXT project) to their set-top boxes
 - I wrote a final evaluation report on all P2P valorization efforts (available at <http://www.pds.ewi.tudelft.nl/fileadmin/pds/homepages/epema/I-Share-D4.16.pdf>)

Software/systems made available

- A simplified version of the **Condor Flocking** mechanism that we designed and implemented (see the appendix on research highlights in my Research Statement) has been incorporated into the production version of Condor. Condor is in daily production use in hundreds of places in the world, both in research institutes and in industry (see <http://www.cs.wisc.edu/condor/map>).
- The **KOALA multicluster scheduler** has been deployed on the DAS since 2005 and has been used by master's and PhD students and by researchers of NIKHEF and Philips Research (see <http://www.pds.ewi.tudelft.nl/koala>).

Open-data initiatives

- The **Grid Workloads Archive** (GWA, <http://gwa.ewi.tudelft.nl>) with anonymized traces of the workloads of many research and production grids that we have created is taken by the European EGEE grid, which is probably the largest production grid in the world, as the basis of their so-called "grid observatory." I have given an invited talk on the GWA at the *EGEE'08* conference (installed in 2007, with A. Iosup).

¹ Valorization is the term used by Dutch universities for technology transfer

- The **Failure Trace Archive** (FTA, <http://fta.inria.fr>) with anonymized traces of failures of diverse distributed systems, created in collaboration with INRIA, France (installed in 2010, with A. Iosup).
 - The **Peer-to-Peer Trace Archive** (P2PTA, <http://p2pta.ewi.tudelft.nl>) with anonymized traces of the workloads of many P2P systems, among which many traces of the BitTorrent system collected by the PDS group (installed in 2011, with A. Iosup).
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