

## Prof. Prof. (OM) Dr. rer. pol. Matthias Jarke

Born 28.5.1952 Hamburg/Germany

Married, three children

### Education

1980 Dr. rer. pol. in Business Administration (with distinction) , Hamburg University (advisor: Prof. Dr. Dr. h.c. Herbert Jacob); thesis topic: "Monitoring and Control of Container Transportation Systems"

1979 Dipl.-Inform. (equivalent to M.Sc. Computer Science)

1977 Dipl.-Kfm. (equivalent to MBA)

1972-1977 Double degree studies in Computer Science, Physics, and Business Administration, Hamburg University, Germany

### Employment History

2010-2015 Chairman, Fraunhofer ICT Group & Member, Fraunhofer Presidency

2007-2012 Inaugural Dean, IT and Engineering, GUTech German University of Technology in Oman, Muscat

2000- Executive Director, Fraunhofer FIT Institute for Applied Information Technology, Sankt Augustin and Aachen, Germany

1992-2000 Chairman, Computer Science Department, RWTH Aachen University

1991- Professor of Information Systems and Databases (Informatik 5), RWTH Aachen University

1986-1990 Professor of Dialog-Oriented Systems, Passau University

1981-1986 Assistant/Associate Professor of Information Systems, Stern School of Business, New York University (early promotion and tenure 1985)

1977-1981 Research Assistant, Operations Research, Hamburg University

### Honors and Awards

2020 RWTH Fellow ("professor of the year" award of the university)

2020 Peter Chen Award (lifetime award in conceptual modeling)

2018 Fraunhofer Münze (highest distinction for institute directors)

2014 Fellow, ACM Association Computing Machinery (first in NRW state)

2013 Member, acatech National Academy of Science and Engineering

2012 Fellow, GI German Informatics Society

2012 Honorary Adjunct Professor, GUTech, Muscat Oman

2012 Fraunhofer Medaille

2006- Who is Who in the World

1995- Several best paper awards, most recently at CAiSE 2020 Grenoble

1972-1977 Scholarship, Studienstiftung des Deutschen Volkes

### Research Areas

(Meta-)Database implementation (1976-)

- Co-developer of Pascal/R first database programming language, including first full relational calculus implementation in Europe;
- Relational and deductive query optimization: first survey paper structuring the field, one of the most-cited database papers until early 1990's [JK84], and optimizing deductive frontend to RDB
- Widely used deductive meta database ConceptBase [JGJ\*95], first KBMS operational via internet across the Atlantic in 1989
- Data quality management and metadata management: EU-Projects Compulog, DWQ [JLVV99]
- Co-Founder, International Data Space Initiative (2014-)
- Co-Speaker, DFG Excellence Cluster "Internet of Production" (2019-2026)

Requirements and Information Systems Engineering (1986-)	<ul style="list-style-type: none"> <li>• Co-founded Basic Research in Requirements Engineering by coordinating all EU Basic Research Projects in RE up to 2000 (DAIDA, NATURE, CREWS)</li> <li>• frequently cited contributions to conceptual modeling languages [MBJK90], Scenarios [WPJ98] and Traceability [RJ01]</li> <li>• Co-founded DFG-funded cross-disciplinary collaborative research centers with cultural sciences (SFB 427 Media and Cultural Communication, 1998-2008) and chemical engineering (SFB 476 IMPROVE, 1996-2006)</li> </ul>
(Mobile) Cooperative Information Systems (1978-)	<ul style="list-style-type: none"> <li>• Co-Founder, Fraunhofer Center Digital Energy Aachen (2019-)</li> <li>• Ph.D. research integrating conceptual models (ER/Petritnet) with optimization of worldwide container transportation (1978-1980)</li> <li>• Supervised two of the earliest Ph.D. theses on distributed group decision and negotiation support systems (1983-1985) [JJS87]</li> <li>• Participated in BSCW project with Fraunhofer FIT, the worldwide first open Social Media system on the Internet (1995-1999);</li> <li>• Community Support in the „Long Tail“ of the Internet (ATLAS lightweight application server), including web-based learning</li> <li>• Deputy Coordinator, DFG-funded excellence cluster Ultra-Highspeed Mobile Information and Communication (UMIC)</li> <li>• Mobile web servers and P2P data management in cultural reconstruction, e.g. Afghanistan's Bamiyan Valley</li> </ul>
Grants	<ul style="list-style-type: none"> <li>• Annual grant sum &gt;2 m€ Informatik 5, &gt;15 m€ in Fraunhofer FIT</li> </ul>
<b>Publications</b>	
Books	<ul style="list-style-type: none"> <li>• Several research monographs, including “Foundations of Data Warehouse Quality” (Springer, 2<sup>nd</sup> ed. 2003) and “Meta Modeling for Method Engineering” (MIT Press 2010)</li> <li>• Over 30 edited volumes and conference proceedings</li> <li>• Editor of Special Issues in Communications of the ACM (1998), IEEE Transactions on Software Engineering (1992 &amp; 1998), RE Journal (1999), WI/BISE (2010, 2014, 2019), ACM/TMIS (2013)</li> </ul>
Refereed Papers/ Impact	<p>Over 400 refereed publications in DBLP database, including</p> <ul style="list-style-type: none"> <li>• journals CACM, ACM-TOIS, ACM-TOSEM, IEEE-TSE, IEEE-TKDE, JIIS, JMIS, MISQ, JAIS, DSS, IS, VLDB Journal, DKE, IJCIS, IEEE Software, Computers&amp;Chemical Engineering, ...;</li> <li>• international conferences CAiSE, ER, ICSE, ESEC, RE, ICIS, ECIS, WI, VLDB, SIGMOD, EDBT, ICDT, MDM, EC-TEL, ICWL</li> </ul>
Editorial Boards	<ul style="list-style-type: none"> <li>• Chief Editor, Information Systems (Elsevier), 1993-2003</li> <li>• Current editor: ACM TMIS, Wirtschaftsinformatik/BISE, Information &amp; Management, RE Journal, J.UCS, Organizational Computing &amp; Electronic Commerce, Data &amp; Knowledge Eng.</li> <li>• Previous: ACM-TOIS, IEEE TSE, JAIS, DSS, SIAM J. Computing</li> </ul>
Conference Program Chair/General Chair	<ul style="list-style-type: none"> <li>• International DB/IS conferences VLDB (1994, 1997), EDBT (1994), CAiSE (1999, 2014), CoopIS (1994), SSDBM (1998), ECSCW (2002), Mobile HCI (2009), ICWL (2010), ER (2014)</li> <li>• Track program chair: ICIS (1998, 2010, 2013), ECIS (2000)</li> <li>• National : Informatik (1997), KI (2002), BTW (2007), MuC 2016</li> </ul>
SUNSite Central Europe	<p>Since 1995 one of the largest scientific web servers in Germany, helping rapid uptake of WWW technologies</p> <ul style="list-style-type: none"> <li>• First large-scale browser distributions (several million downloads of Netscape and Internet Explorer in 1995-1997)</li> <li>• First website, Aachen City, German Track and Field Society</li> <li>• CEUR workshop proceedings series with over 1500 volumes</li> <li>• Mirror site for important projects such as DBLP, Dagstuhl</li> </ul>

## Teaching and Research Training

- 1996- First *Hightech Entrepreneurship* courses, RWTH Aachen University  
2001- Founded *Bonn-Aachen International Center for Information Technology (B-IT)*, pioneering top-level English language master programs in applied IT for top international bachelor graduates;  
Coordinator, *B-IT Research School* of Doctoral Training
- 1984- Supervised four habilitations and over 90 doctoral dissertations at New York University, Passau University, RWTH Aachen University, over 25 professors among graduates and postdocs

## Community Service

- 2000-2007 Elected senior reviewer, DFG-Fachkollegium Praktische Informatik  
2000-2007 Treasurer, then President, Gesellschaft für Informatik (GI) e.V.;
- Scientific coordinator of BMBF-Science Year „Informatikjahr 2006“ with over 400 regional events throughout Germany; in this year, the German government established its first Hightech strategy, started annual series of Chancellor Merkel IT summits
- 2009-2010 Vice President, ERCIM European Research Consortium for Informatics and Mathematics
- 1998-2001 Founding Vice President, Association for Information Systems (AIS)  
2000- Member of advisory and supervisory boards, e.g.
- Program Board, Hessian excellence program LOEWE
  - Supervisory Board (Hochschulrat), TH Cologne (Chair)
  - Past Chair, Advisory board, OFFIS e.V. Oldenburg
  - Past Chair, Advisory board Computer Science, University Vienna
  - Past Member, CeBIT Fair Committee, Hannover
  - Past Member, CONNECT Advisory Forum, EU Commission

## 10 most-cited papers (from over 700, > 20.400 Google Scholar cites 08/2020, H-index 65)

- RJ01 Ramesh, M. Jarke: Towards reference models for requirements traceability. *IEEE Trans. Software Eng.* 27, 1 (2001): 58-93 (1211)
- MBJK90 J. Mylopoulos, A. Borgida, M. Jarke, M. Koubarakis: Telos – representing knowledge about information systems. *ACM Trans. Information Systems* 8, 4 (1990): 325-362 (1185 citations)B.
- JK84 M. Jarke, J. Koch: Query optimization in database systems. *ACM Computing Surveys* 16, 2 (1984): 111-152 (943)
- MLVV03 M. Jarke, M. Lenzerini, Y. Vassiliou, P. Vassiliadis: *Fundamentals of Data Warehouses*. Springer, 2<sup>nd</sup> ed 2003, also Polish, Chinese (870)
- WPJ98 K. Weidenhaupt, K. Pohl, M. Jarke: Scenarios in system development – current practice. *IEEE Software* 15, 2 (1998): 34-45 (best papers ICRE 98) (607)
- JGJ\*95 M. Jarke, R. Gellersdörfer, M.A. Jeusfeld, H.W. Nissen, M. Staudt: ConceptBase – a deductive object base for metadata management. *Journal of Intelligent Information Systems* 4, 2 (1995): 167-192 (430)
- CJF07 M.A. Chatti, M. Jarke, D. Frosch-Wilke : The future of eLearning: a shift to knowledge networking and social software. *Intl. J. Knowledge & Learning* 3, 4-5 (2007): 404-420 (378)
- JJQV99 M. Jarke, M. Jeusfeld, C. Quix, P. Vassiliadis: Architecture and quality of data warehouses – an extended repository approach. *Inform. Syst* 24, 3 (1999): 15-45 (best papers CAISE 1998) (361)
- JBC98 M. Jarke, X.T. Bui, J.M. Carroll: Scenario management – an interdisciplinary approach. *RE Journal* 3, 3-4 (1998): 155-173 (339)
- JJS87 M. Jarke, M.T. Jelassi, M.F. Shakun: MEDIATOR – towards a negotiation support system. *European J. Operational Research* 31, 3 (1987): 314-334 (301)