

# Curriculum Vitae

A.J.C. van Gemund

Jan 1, 2012

## 1 Personal

Full Name           Arie Jan Cornelis van Gemund (“Arjan”)  
Date of Birth       September 4, 1955  
Place of Birth      Eindhoven, The Netherlands  
Gender              Male  
Nationality         Dutch  
Marital Status     widower (two children)  
Current Address    Meester Lokstraat 10-A, 8427 RC Ravenswoud  
Email               a.j.c.vangemund@tudelft.nl  
Languages          Dutch (mother tongue)  
                      English (CEF level C2 - “native speaker”)

## 2 Education

1996   PhD degree (*dr*, cum laude)   Computer Science, DUT<sup>1</sup>  
1988   MSc degree (*ir*, cum laude)   Computer Science, DUT  
1984   P<sub>2</sub> exam                           Applied Physics, DUT  
1981   BEng degree (*ing*)                Physics Engineering, Rijswijk Polytechnic

## 3 Employment

2009 - 2012   Full Professor (0.4 fte)           Embedded Software group, CS Dept., DUT  
2006 - 2009   Full Professor (0.4 fte)           Software Engineering group, CS Dept., DUT  
2005 - 2006   Associate Professor (0.4 fte)      Software Engineering group, CS Dept., DUT  
2002 - 2005   Associate Professor (0.4 fte)      Parallel/Distr. Systems group, CS Dept., DUT  
2000 - 2005   Cofounder and CTO                  Science and Technology BV (“S&T”), Delft  
2000 - 2002   Associate Professor (0.6 fte)      Computer Architecture group, EE Dept, DUT  
1998 - 2000   Associate Professor                Computer Architecture group, EE Dept, DUT  
1992 - 1998   Assistant Professor                Computer Architecture group, EE Dept, DUT  
1989 - 1992   Research Scientist                 TNO Institute of Applied Computer Science, Delft  
1987 - 1988   Teaching Assistant                 Computer Science Lab., DUT  
1982 - 1985   Embedded Systems Engineer        R&D Div., Gist-brocades NV, Delft  
1977 - 1978   Military Service                    543rd Battalion, RNA Signal Corps  
1975 - 1977   Road Manager / Technician         Popular Music Industry

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<sup>1</sup>Delft University of Technology

## 4 Experience

My professional experience is based on employment in industry (Gist-Brocades NV), semi-government (TNO), academia (DUT), and private enterprise (S&T BV). Disciplines involved are applied physics, electrical engineering, computer science and engineering, human resource management, and project management.

### 4.1 Delft University of Technology (1992 - 2012)

#### 4.1.1 Research

Spent some 10 years on various subjects within the parallel processing domain (performance modeling, programming, compiling, scheduling), and some 10 years on fault diagnosis of (embedded) software and (multidisciplinary) hardware.

- Consultant for Philips Healthcare, Embedded Systems Institute, Logica (GENIUS project with ESA and DUT), 2011 - 2012.
- Workpackage Leader Bsik (ESI) Project POSEIDON (Maritime Safety and Security Systems, Thales, ESI, DUT, UT, UvA, VU, UM). Supervision includes 1 PhD student and 1 postdoc. 2007 - 2012.
- Project Leader PROGRESS Project FINESSE<sup>2</sup> (Embedded Systems Fault Diagnosis, Océ, LogicaCMG, DUT, TU/e). Supervision includes 1 PhD student. 2005 - 2009.
- Workpackage Leader Bsik (ESI) Project TRADER (Reliable Embedded Systems, Philips, ESI, DUT, UT, UL, IMEC). Supervision includes 1 PhD student and 1 postdoc. 2004 - 2008.
- Principal Investigator STW Project SCALP (Parallel Embedded Systems Programming Environment, Philips, DUT, VU). 2004 - 2008.
- Work Package Leader EZ-TS (ESI) Project TANGRAM (Integration Testing and Diagnosis of Embedded Systems, ASML, ESI, DUT, TU/e, UT, RU, S&T). Supervision includes 1 PhD student. 2003 - 2007.
- Project Leader 1GS Project Model-Based Systems Engineering (model-based diagnosis and simulation of multi-disciplinary systems). Responsible for development new diagnostic systems modeling methodology and toolset. Supervision includes 1 PhD student. 2001 - current.
- Member TRAIL-TNO Project CABS (fault diagnosis and recovery in multi-modal transport networks with autonomous mobile actors). Assistance in the supervision of 1 PhD student. 2001 - 2006.
- Principal Investigator SION Project AUTOMAP (task parallel programming environment). Supervised 1 PhD thesis. 1997 - 2001.
- Project Leader 1GS Project Parallel and Distributed Systems Engineering (performance modeling, scheduling, programming models), Responsible for development new performance modeling methodology and toolset. Supervised 2 PhD theses. Collaborations with Philips Research, TNO-TPD, IISc. Bangalore, U. of Valladolid, 1993 - 2001.

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<sup>2</sup>Ranked number 1 out of 18 project submissions nation-wide, of which only 2 submissions were accepted.

- Principal Investigator ESPRIT Project JOSES (parallel Java for embedded systems), 1999 - 2001.
- Work Package Leader STW Project COLARADO (embedded real-time system voor collision avoidance radar) in collaboration with UTIA Prague (Czech Academy of Sciences), IRCTR Delft, 1995 - 1998.
- Principal Investigator SPIN project ParTool (parallel programming development environment). Supervised 1 PhD thesis, in parallel with my own PhD work. 1992 - 1995.
- Contract Research for TNO in the context of two ESPRIT projects (PREPARE, HAMLET, see Section 4.3.1), 1992 - 1993.

#### 4.1.2 Teaching

Taught, created, and revised a wide range of EE, ES, and CS courses ranging from Y1 to Y4 level. Prime author of the DUT dossier 3TU master's program Embedded Systems.

- Lecturer (2004 - 2012) *Embedded Real-Time Systems*  
Mandatory course ES Y4, elective course CS Y4. Totally re-created the course and lab. Lab project focuses on embedded controller design for electrical model helicopters (quad-rotor AVs as of 2007). Course approach is multidisciplinary and involves VHDL, Embedded C, FPGA soft processing, simple control theory, mechanics, actuator and sensor electronics, simulation, signal processing. Involved Delft Aerospace MAVLAB to develop novel quad-rotor platform.
- Lecturer (2007 - 2009) *Embedded Systems Fault Diagnosis*  
Elective course CS Y4, ES Y4. Created the course. Focus is on model-based reasoning, modeling multidisciplinary systems, diagnosis algorithms.
- Lecturer (2007) *Embedded Programming*  
Mandatory course CS Y2. Created the course and accompanying lab from scratch. Focus lies on programming using a real-time operating system. Lab project focuses on simple embedded controller design (cruise control, using simple electro-mechanical setup designed by author). After the first, succesful edition, the course has been transferred to another teacher. In 2008 the lab has been upgraded from 12 seats to 32 seats under the author's leadership.
- Primary author of the DUT *Master's Program Embedded Systems* (accredited in 2007). Responsibilities include curriculum definition, proposal writing, and financial analysis, all in close collaboration with the sister universities TU/e and UT, as well as numerous departments and groups within DUT-EWI and DUT-3ME.
- Lecturer (1994 - 2005) *Performance Modeling of Parallel Systems*  
Elective course CS and EE Y4. Created the course, the lecture notes, ("Performance Modeling of Parallel Systems: An Introduction", 101 pp.), as well as the lab software tools.
- Lecturer (2000 - 2001) *Logic Design*  
Obligatory course CS Y1. Responsible for course enhancement including material on microprocessing concepts, and associated lecture notes upgrade.
- Project Leader and Lecturer (1999 - 2000) *Computer Systems*  
Obligatory course sequence EE Y1. Responsible for creation of a new, integrated course on designing hardware (Logic Design, VHDL) and software (Scheme). Responsible for course contents,

as well as for the creation of a new lab on Logic Design, comprising assignments, ranging from connecting gates to implementing a simple microprocessor<sup>3</sup> control application on an FPGA using VHDL. Supervised two teachers, a lab instructor, as well as the course web site development.

- Lecturer (1996 - 2000) *Interpretation of Computer Programs*  
Obligatory course EE Y2. Responsible for major revision of the course and lab contents, including new lecture notes.
- Lecturer (1996 - 2000) *Performance Modeling of Parallel and Distributed Systems*  
Elective course ASCI Graduate School. Also responsible for the (multi-teacher) course management.
- Supervision of PhD students
  - A. Gonzalez-Sanchez (DUT, graduated 2011)
  - A. Feldman (DUT, graduated cum laude 2010)
  - R. Abreu (DUT, graduated 2009)
  - H. Gautama (DUT, graduated 2004)
  - A. Gonzalez-Escribano (U. of Valladolid, graduated 2003)
  - A. Radulescu (DUT, graduated 2001)
  - H. Jonkers (DUT, graduated 1995)

Assisted in the supervision of PhD student J. Zutt (DUT).

- Supervision of numerous MSc projects (40+), of which 5 led to *cum laude* degrees. In one case the MSc project was selected Best MSc Project faculty-wide (2007-2008).
- Supervision of numerous 1st-year group assignment projects, TWAIO projects, and BSc projects.
- Co-supervision of several MSc projects at the DUT 3mE and Aerospace faculties.

#### 4.1.3 Miscellaneous

- Organization "Nederlandse Testdag", 2007 (150 participants)
- Member of the DUT Examination Committee for the Master Degree programs Embedded Systems and Computer Engineering.
- Invited talks at seminar Performance Modeling of Distributed Systems, Dagstuhl (2002), Launch IEEE Benelux Embedded Systems Chapter, Eindhoven (2009), Dutch Dependability Day, Enschede (2009).
- Obtained 300 hour course certification on Human Resource Management in Academia, 1998 - 1999.
- Conference tutorial "Performance Modeling of High-Performance Systems", *International Conference on High-Performance Computing*, Bangalore, Dec. 18-21, 1997.
- Invited Lecturer at Computer Science faculty, University of Valladolid (one course under SOCRATES program).

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<sup>3</sup>A simple  $N$ -register-1-ALU architecture, specifically designed for this lab course by the author.

- Invited Lecturer at Computer Science faculty, University of Crete (one course under SOCRATES program).
- DUT expert testimonial in civil court case on a computer-technical issue.
- Invited talk at Symposium on Performance Modeling, Vienna, 1993.
- Numerous invited talks within The Netherlands.
- PhD committee member for H.M. van der Bijl (UT, 2011), A. Varbanescu (TUD, 2010), D. Borodin (TUD, 2010), C. Meenderinck (TUD, 2010), J. Keijzers (TU/e, 2009), H. Sözer (UT, 2009), A. Iosup (DUT, 2009), M. Lormans (DUT, 2009), F. Duarte (DUT, 2008), I.M. de Visser (TU/e, 2008), I. de Jong (TU/e, 2008), M.J.H. Heule (DUT, 2008), N. Braspenning (TU/e, 2008), H.H. Mohamed (DUT, 2007), R. Boumen (TU/e, 2007), P. Spinnato (U. of Amsterdam, 2003), J.F.C.M. de Jongh (DUT, 2002), A. Radulescu (DUT, 2001), T. Rühl (Free University of Amsterdam, 2000)
- Reviewer for IEEE Trans. on Parallel and Distributed Systems, IEEE Trans. on Software Engineering, IEEE Trans. on Computers, Journal on Empirical Software Engineering, Journal on Parallel and Distributed Computing, Performance Evaluation, Parallel Processing Letters, Parallel Computing, Information Processing Letters, Journal of Systems and Software, Int'l Journal of Supercomputer Applications and High-Performance Computing, Computer Systems Science and Engineering, Software Practice and Theory, Simulation Practice and Theory, The Computer Journal, and numerous conference and book reviews.
- Program Committee Member of ACM SAC'12, PECCS'12, ACM SAC'11, PECCS'11, TEBUG'11, IWPD'11, DX'10, CIT'10, HPCC'10, DX'09, SINTER'09, ACM SAC'09, HPCC'09, ACM SAC'08, HPCC'08, ESC'07, HPCC'05, Europar'03, ParCo'01, Europar'00, IPDS'98, DAPSYS'96
- Member of faculty Exam Committee CE/ES (2005 - 2011).
- Member of faculty Exam Committee CS (1997 - 2000).
- Principal Investigator Graduate School ASCI (1994 - 2000).
- Member of faculty Web Site Editorial Board (1996 - 1998).
- Member of faculty ICTO Board (1996 - 1998).
- Member of the Profile and Search Committees "Applied Electromagnetism", EE Dept. DUT (2009).
- Member of the Profile and Search Committees "Microwave Technology and Systems for Radar", EE Dept. DUT (2008 - 2009).
- Secretarial Member of the Profile and Search Committees "Design of parallel / distributed embedded computer systems", EE Dept. DUT (1994 - 1995).
- Computer Architecture group board member with very high degree of active involvement, responsibilities include course management and most of the communications within the lab and between the lab and the faculty.
- Member IEEE Computer Society.

#### 4.1.4 Honors & Awards

- PhD degree cum laude
- MSc degree cum laude
- VALID'10 Best Paper Award
- ASE'09 Best Demo Award
- PHM'08 Best Paper Award
- INCOSE'07 Best Paper Award
- AutoTestCon'05 Best Paper Award
- Europar'03 Best Paper Award
- VecPar'02 Best Paper Award
- IPDPS'01 Best Paper Award

## 4.2 Science and Technology BV (2000 - 2005)

Main activities: general management, project acquisition, and technology development as CTO. Company profile: SW services, with emphasis on multidisciplinary systems engineering; founded in 2000 by four partners including the author (25% share holder); status 2005: 10 employees, 1 M EUR turnover.

### 4.2.1 Management

- 2003 - 2005. CTO, technology development, project acquisition.
- 2000 - 2002. CFO, administrative and financial management, human resources management, and project acquisition and management
- 2001. Acquired DUT Technostarter status

### 4.2.2 Projects

Author has been personally involved (acquisition and/or execution) in the following projects:

- 2003 - 2005. Health management technology research, EZ-WBSO)
- 2003 - 2005. Prognostic health management of reusable launch vehicles, ESA)
- 2002 - 2005. QUADAS (condition monitoring of satellite instruments, ESA)
- 2002 - 2005. AHCI (Advanced human-computer interface for ISS payloads, ESA)
- 2001 - 2002. Twister (CFD modeling of supersonic gas dehydration process, Shell)

## 4.3 TNO (1989 - 1992)

Main activities: research and development in computer science with an emphasis on high-performance (parallel) computing.

### 4.3.1 Projects

- Principal Investigator in ESPRIT-II Project HAMLET (distributed systems design environment). Responsible for development of an interface standard for performance simulation tools.
- Principal Investigator in ESPRIT-II Project PREPARE (compilation for high-performance systems). Responsible for the development of a performance estimator for compile-time performance optimization.
- Work Package Leader in SPIN Project ParTool (parallel programming environment). Responsible for development of a methodology for the performance prediction of parallel systems (which eventually lead to my PhD project). Supervised 1 PhD student (H. Jonkers, DUT)
- Principal Investigator in ESPRIT-II project IMPACT (integration of information modeling systems). Responsible for the development of a NIAM-to-EXPRESS translator, as well as client-server architecture for distributed CIM applications.
- Principal Investigator in ESPRIT-I project GENESIS (distributed-memory programming environments). Responsible for run-time system for distributed task execution on a processor network in the context of the parallelization of the TNO FEM software package DIANA.
- Principal Investigator in TNO Project (knowledge-based real-time diagnosis in process plants). Responsible for the development of modeling methods for fault diagnosis using expert systems.

### 4.3.2 Miscellaneous

- Software Development (many projects)
- Consultancy (e.g., Future HPC Policy of the European Space Agency)

My performance modeling activities (including the supervision of a PhD student at the EE Dept. of DUT) have led to my transfer to the university in 1992.

## 4.4 Gist-brocades (1982 - 1985)

Main activities: Embedded hardware and software development in the context of multi-disciplinary laboratory automation projects, involving physics, analog/digital electronics, and computer engineering.

### 4.4.1 Projects

- various microprocessor-based hardware and software development projects for automating robotic, optic, and chemical processing equipment used in laboratory research facilities.
- development of a thread library *avant la lettre*, used as light-weight OS in the above projects
- development of virtual machines, system software utilities, and communication hardware and software as part of an integrated embedded systems development environment.

#### 4.4.2 Miscellaneous

- Software and hardware debugging specialist
- Main embedded systems architect
- Taken a number of courses at DUT, eventually leading to the completion of the P<sub>2</sub> program Physics Engineering.

The software part of the job sparked a great interest in Computer Science, which made me quit my job to pursue a full-time study (financed through personal savings, state subsidy, a teaching assistantship, and revenues from private projects).

#### 4.5 Short Visits

In the course of my DUT appointment, my MSc, and Polytechnic studies I had the privilege of visiting the following institutions:

- Computer Science faculty, University of Valladolid (three times as visiting professor between 1998 and 2004)
- TNO Institute of Applied Computer Science, Delft. Theory on translation of data parallel languages (Msc thesis project). 1988 (6 months).
- TNO Physics and Electronics Laboratory, Den Haag. Research on acoustic properties of submerged damping materials under extreme water pressure. Due to the uncovering of previously unknown properties, the visit has been extended by another 6 months at the request of TNO. 1981 - 1982 (6 months).
- Dijkzicht University Hospital, Rotterdam. Development of a microprocessor-driven, servo-controlled optical attenuator in the presence of strongly non-linear optical transfer functions. (BEng thesis project). 1981 (3 months).
- TNO-TPD, Delft, TNO Human Factors, Soesterberg. Experimental performance assessment of a method to measure audibility in opera houses and auditoria. 1980 (3 months).
- Shell Research Laboratory, Amsterdam. Feasibility study on electronic leakage detection system for off-shore riser inspection. On the basis of the results obtained, a patent filing procedure was considered. Unfortunately, the additional research required to finalize the proof of concept after the author had left, could not be realized. 1980 (3 months).

## 5 Publications

The following sections list all publications (refereed and non-refereed). Note: the (many) MSc and PhD theses from my students are *not* included.

### 5.1 Theses

1. A.J.C. van Gemund, *Performance Modeling of Parallel Systems*. PhD Thesis, Delft University of Technology, The Netherlands, ISBN: 90-407-1326-X, Apr. 1996.
2. A.J.C. van Gemund, *A View Language and Calculus*. MSc Thesis, Tech. Rep. 89 ITI B 46, TNO Institute of Applied Computer Science, Delft, The Netherlands, Jan. 1989.

## 5.2 Book Chapters

3. J. Zutt, A.J.C. van Gemund, M.M. de Weerdt, C. Witteveen, "Dealing with Uncertainty in Operational Transport Planning", In R.R. Negenborn and Z. Lukszo and H. Hellendoorn (Eds.): *Intelligent Infrastructures*, Ch. 14, pp. 355-382. 2010. Springer.
4. R. Abreu, P. Zoetewij, A.J.C. van Gemund, "Fault Localization in Embedded Software", in (J. Hooman, ed.) *Trader: Consumer-Perceived System Reliability of High-Volume Consumer Products*, Embedded Systems Institute, pp. 103 - 112, 2009.
5. P. Zoetewij, R. Abreu, A.J.C. van Gemund, "Spectrum-Based Fault Localization in Practice", in (J. Hooman, ed.) *Trader: Consumer-Perceived System Reliability of High-Volume Consumer Products*, Embedded Systems Institute, pp. 113 - 124, 2009.
6. J. Pietersma, A.J.C. van Gemund, "Model-Based Diagnosis", in (J. Tretmans, ed.) *Tangram: Model-based Integration and Testing of Complex High-Tech Systems*, Embedded Systems Institute, ISBN: 978-90-78679-02-8, Nov 2007, pp. 163-178.
7. J. Pietersma, A.J.C. van Gemund, "Costs and Benefits of Model-Based Diagnosis", in (J. Tretmans, ed.) *Tangram: Model-based Integration and Testing of Complex High-Tech Systems*, Embedded Systems Institute, ISBN: 978-90-78679-02-8, Nov 2007, pp. 179-187.

## 5.3 Int'l Journals

8. A. Gonzalez-Sanchez, E. Piel, R. Abreu, H-G. Gross, A.J.C. van Gemund, "Prioritizing Tests for Software Fault Localization". *Software: Practice and Experience*, Vol. 41, No. 10, pp. 1105-1129, 2011.
9. A. Gonzalez-Sanchez, E. Piel, H-G. Gross, A.J.C. van Gemund, "A Runtime Testability Metric for Dynamic High-Availability Component-based Systems", *Int'l Journal On Advances in Systems and Measurements*, Vol. 4, No. 1-2, pp. 122-134. 2011.
10. R. Abreu, P. Zoetewij, A.J.C. van Gemund, "Simultaneous Debugging of Software Faults", *Journal of Systems and Software*, Vol. 84, No. 4, April 2011, pp. 573-586.
11. R. Abreu, A.J.C. van Gemund, "Diagnosing Intermittent Faults Using Maximum Likelihood Estimation", *Artificial Intelligence*, Vol 174, No 18, pp. 1481 - 1497, 2010.
12. A. Feldman, G. Provan, A.J.C. van Gemund, "A Model-Based Active Testing Approach to Sequential Diagnosis", *Journal of Artificial Intelligence Research*, Vol 39, pp. 301 - 334, Sept. 2010.
13. A. Feldman, T. Kurtoglu, S. Narasimhan, S. Poll, D. Garcia, Johan de Kleer, Lukas Kuhn, A.J.C. van Gemund, "Empirical Evaluation of Diagnostic Algorithm Performance Using a Generic Framework", *International Journal of Prognostics and Health Management*, online July 6, 2010.
14. A. Feldman, G. Provan, A.J.C. van Gemund, "Approximate Model-Based Diagnosis using Greedy Stochastic Search", *Journal of Artificial Intelligence Research*, Vol 38, pp. 371 - 413, 2010.
15. R. Abreu, A. Gonzalez, P. Zoetewij, A.J.C. van Gemund, "Using Fault Screeners for Software Error Detection". In WEBIST / ENASE 2008 Revised Best Papers, *Lecture Notes in Communications in Computer and Information Science (LNCCIS)*, Vol 69, pp. 60 - 74, 2010.

16. A. Gonzalez Escribano, V. Cardenoso Payo, A.J.C. van Gemund, "Performance Implications of Synchronization Structure in Parallel Programming", *Parallel Computing*, vol 35, no 8-9, pp. 455 - 474, 2009.
17. R. Abreu, P. Zoetewij, R. Golsteijn, A.J.C. van Gemund, "A Practical Evaluation of Spectrum-based Fault Localization", *Journal of Systems and Software*, vol 82, no 11, pp. 1780 - 1792, 2009.
18. G.L. Reijns, A.J.C. van Gemund, "Reliability Analysis of Hierarchical Systems using Statistical Moments," *IEEE Transactions on Reliability*, Vol 56, No 3, pp. 525 - 533, Sept 2007.
19. J. Pietersma, A.J.C. van Gemund and A. Bos, "A Model-based Approach to Sequential Fault Diagnosis," *IEEE Instrumentation and Measurement*, Vol 10, No 2, pp. 46-52, April 2007.
20. H.G. Gross, A.J.C. van Gemund, "The Delft MS Curriculum on Embedded Systems", *ACM SIGBED Review*, Vol 4, No 1, pp. 1-10, January 2007.
21. H. Gautama, A.J.C. van Gemund, "Performance prediction of stochastic parallel task compositions," *IEEE Transactions on Parallel and Distributed Systems*, Vol 17, No 1, pp. 78-91, Jan 2006.
22. G.L. Reijns and A.J.C. van Gemund, "Performance prediction of parallel programs using Pierson distributions," *Parallel Computing*, Vol 31, No 9, pp. 877-899, Sept 2005.
23. H. Gautama and A.J.C. van Gemund, "Symbolic performance prediction of speculative parallel programs," *Parallel Processing Letters*, vol. 13, Dec. 2003, pp. 513-524.
24. A.J.C. van Gemund, "Symbolic performance modeling of parallel systems," *IEEE Transactions on Parallel and Distributed Systems*, vol. 14, Feb. 2003, pp. 154-165.
25. A. Radulescu and A.J.C. van Gemund, "Low-cost task scheduling for distributed-memory machines," *IEEE Transactions on Parallel and Distributed Systems*, vol. 13, June 2002, pp. 648-658.
26. G.L. Reijns, A.J.C. van Gemund and H. Gautama, "Performance analysis of multi-stage interconnection networks with deterministic service times," *Parallel Processing Letters*, vol. 11, 2001, pp. 109-123.
27. H. Bal *et al.*, "The distributed ASCI supercomputer project," *Operating Systems Review*, vol. 34, Oct. 2000, pp. 76-96.
28. G.L. Reijns, A.J.C. van Gemund and H. Gautama, "Analysis of a shared-memory multiprocessor via a novel queuing model," *Journal of Systems Architecture*, vol. 45, 1999, pp. 1189-1193.
29. C. van Reeuwijk, A.J.C. van Gemund and H.J. Sips, "Spar: A programming language for semi-automatic compilation of parallel programs," *Concurrency: Practice and Experience*, vol. 9, Nov. 1997, pp. 1193-1205.

#### 5.4 Int'l Conferences (refereed)

30. A. Gonzalez-Sanchez, R. Abreu, H-G. Gross, A.J.C. van Gemund, "Prioritizing Tests for Fault Localization through Ambiguity Group Reduction", *26th IEEE/ACM International Conference on Automated Software Engineering (ASE 2011)*, Lawrence, KS, November 6-10, 2011, pp. 83-92.

31. A. Gonzalez-Sanchez, R. Abreu, H-G. Gross, A.J.C. van Gemund, "Spectrum-Based Sequential Diagnosis", *25th AAAI Conference on Artificial Intelligence (AAAI'11)*, San Francisco, August, 2011.
32. E. Piel, A. Gonzalez-Sanchez, H-G. Gross, A.J.C. Van Gemund, "Spectrum-based Health Monitoring for Self-Adaptive Systems", *5th IEEE Int'l Conference on Self-Adaptive and Self-Organizing Systems (SASO'11)*, Ann Arbor, Michigan, October, 2011, pp. 99-108.
33. A. Gonzalez-Sanchez, R. Abreu, H-G. Gross, A.J.C. van Gemund, "An Empirical Study on the Usage of Testability Information to Fault Localization in Software", In *Proc. Int'l Symposium on Applied Computing (SAC'11)*, pp. 1398-1403. ACM Press. 2011.
34. R. Abreu, A. Gonzalez-Sanchez, A.J.C. van Gemund, "A Diagnostic Reasoning Approach to Defect Prediction", In K.C. Mehrotra et al. (Eds.), *Proc. of the 24th Int'l Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE'11)*, Lecture Notes on Artificial Intelligence 6704, Springer-Verlag. pp. 416-425. 2011.
35. R. Abreu, A. Gonzalez-Sanchez, A.J.C. van Gemund, "Exploiting Count Spectra for Bayesian Fault Localization", *6th International Conference on Predictive Models in Software Engineering (PROMISE'10)*, Timisoara, Romania, Sept, 2010.
36. A. Gonzalez-Sanchez, E. Piel, H-G. Gross, A.J.C. van Gemund, "Runtime Testability in Dynamic High-Availability Component-Based Systems", *Second International Conference on Advances in System Testing and Validation Lifecycle (VALID'10)*, Nice, France, August, 2010. (**Best Paper Award**).
37. A. Gonzalez-Sanchez, E. Piel, H-G. Gross, A.J.C. van Gemund, "Minimising the Preparation Cost of Runtime Testing based on Testability Metrics", In *Proceedings of the IEEE Computer Software and Applications Conference (COMPSAC'10)*, Seoul, July 2010.
38. H. Sozer, R. Abreu, M. Aksit, A.J.C. van Gemund, "Increasing System Availability with Local Recovery based on Fault Localization", In *Proceedings of the 10th Int'l Conference on Quality Software (QSIC'10)*, Zhangjiajie, July 2010.
39. A. Gonzalez-Sanchez, E. Piel, H-G. Gross, A.J.C. van Gemund, "Prioritizing Tests for Software Fault Localization", In *Proceedings of the 10th Int'l Conference on Quality Software (QSIC'10)*, Zhangjiajie, July 2010.
40. R. Abreu, P. Zoetewij, A.J.C. van Gemund, "Spectrum-based Multiple Fault Localization". In *Proceedings of the 24th International Conference on Automated Software Engineering (ASE'09)*, Auckland, New Zealand, November 2009. pp. 88 - 99, IEEE Computer Society.
41. T. Janssen, R. Abreu, and A.J.C. van Gemund, "Zoltar: A Toolset for Automatic Fault Localization", In *Proceedings of the 24th International Conference on Automated Software Engineering (ASE'09)*, Auckland, New Zealand, November 2009. pp. 658 - 660, IEEE Computer Society. (**Best Demo Award**)
42. R. Abreu, P. Zoetewij, and A.J.C. van Gemund, "Localizing Software Faults Simultaneously". In *Proceedings of the 9th International Conference on Quality of Software (QSIC'09)*, Jeju, South Korea, August 2009. IEEE Computer Society.

43. R. Abreu and A.J.C. van Gemund, “A Low-Cost Approximate Minimal Hitting Set Algorithm and its Application to Model-Based Diagnosis”, In *Proceedings of the 8th Symposium on Abstraction, Reformulation and Approximation (SARA’09)*, Lake Arrowhead, CA, July 2009.
44. R. Abreu, P. Zoetewij, and A.J.C. van Gemund, “A New Bayesian Approach to Multiple Intermittent Fault Diagnosis”, In *Proceedings of the 21st Int’l Joint Conference on Artificial Intelligence (IJCAI’09)*, July, CA, 2009.
45. A. Feldman, G. Provan, A.J.C. van Gemund, “FRACTAL: Efficient Fault Isolation Using Active Testing”, In *Proceedings of the 21st Int’l Joint Conference on Artificial Intelligence (IJCAI’09)*, July, CA, 2009.
46. A. Feldman, G. Provan, A.J.C. van Gemund, “Solving Strong-Fault Diagnostic Models by Model Relaxation”, In *Proceedings of the 21st Int’l Joint Conference on Artificial Intelligence (IJCAI’09)*, July, CA, 2009.
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## 5.5 Int'l Workshops (Refereed)

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118. A. Feldman, T. Janssen, A.J.C. van Gemund, "Modeling Diagnostic Stochastic Search", *22nd Int'l Workshop on the Principles of Diagnosis (DX'11)*, Murnau, Germany, October 2011, pp. 92-99.
119. A. Gonzalez-Sanchez, R. Abreu, H-G. Gross, A.J.C. van Gemund, "RAPTOR: Greedy Diagnostic Prioritization by Ambiguity Group Reduction", *22nd Int'l Workshop on the Principles of Diagnosis (DX'11)*, Murnau, Germany, October 2011, pp. 84-91.
120. A. Gonzalez-Sanchez, H-G. Gross, A.J.C. van Gemund, "Performance Modeling of Sequential Diagnosis Algorithms", *22nd Int'l Workshop on the Principles of Diagnosis (DX'11)*, Murnau, Germany, October 2011, pp. 106-113.
121. S. Gupta, A.J.C. van Gemund, R. Abreu, "Probabilistic Error Propagation Modeling in Logic Circuits", In *Proc. of the 1st Workshop on Testing & Debugging (TeBug'11)*, pp. 617-623. IEEE Computer Society. 2011.

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125. A. Gonzalez-Sanchez, R. Abreu, H-G. Gross, A.J.C. van Gemund, "Spectrum-Based Sequential Diagnosis", *21st International Workshop on the Principles of Diagnosis (DX'10)*, Portland, OR, Oct 2010.
126. R. Abreu, P. Zoetewij, A.J.C. van Gemund, "Zoltar: A Spectrum-based Fault Localization Tool". In *Proceedings of the 1st International Workshop on Software Integration and Evolution @ Runtime (SINTER'09)*, pp. 23-29, Amsterdam, the Netherlands, August 2009. ACM Press.
127. R. Abreu, A.J.C. van Gemund, "A Statistics-directed Minimal Hitting Set Algorithm", In *Proceedings of the 20th Int'l Workshop on the Principles of Diagnosis (DX'09)*, Stockholm, June, 2009.
128. R. Abreu, P. Zoetewij, A.J.C. van Gemund, "A Bayesian Approach to Diagnose Multiple Intermittent Faults", In *Proceedings of the 20th Int'l Workshop on the Principles of Diagnosis (DX'09)*, Stockholm, June, 2009.
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130. T. Kurtoglu, S. Narasimhan, S. Poll, D. Garcia, L. Kuhn, J. de Kleer, A.J.C. van Gemund, A. Feldman, "Towards a Framework for Evaluating and Comparing Diagnosis Algorithms", In *Proceedings of the 20th Int'l Workshop on the Principles of Diagnosis (DX'09)*, Stockholm, June, 2009.
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132. A. Feldman, G. Provan, A.J.C. van Gemund, "The Lydia Approach to Combinational Model-Based Diagnosis", In *Proceedings of the 20th Int'l Workshop on the Principles of Diagnosis (DX'09)*, Stockholm, June, 2009.
133. R. Abreu, P. Zoetewij, A.J.C. van Gemund, "A Dynamic Modeling Approach to Software Multiple-Fault Localization", In *Proceedings 19th International Workshop on Principles of Diagnosis (DX'08)*, Blue Mountains, Australia, September 2008.
134. W. Mayer, R. Abreu, M. Stumptner, A.J.C. van Gemund, "Prioritizing Model-Based Debugging Diagnostic Reports", In *Proceedings 19th International Workshop on Principles of Diagnosis (DX'08)*, Blue Mountains, Australia, September 2008.

135. A. Feldman, G. Provan, A.J.C. van Gemund, “A Framework and Algorithm for Model-Based Active Testing”, In *Proceedings 19th International Workshop on Principles of Diagnosis (DX’08)*, Blue Mountains, Australia, September 2008.
136. R. Abreu, P. Zoetewij, A.J.C. van Gemund, “An Observation-Based Model for Fault Localization”, In *Sixth International Workshop on Dynamic Analysis (WODA’08)*, Seattle, Washington, ACM, July 2008.
137. A. Feldman, G. Provan, and A.J.C. van Gemund, “Generating Manifestations of Max-Fault Min-Cardinality Diagnoses”, In *Proc. 18th Int’l Workshop on Principles of Diagnosis (DX-07)*, Nashville, TN, pp. 83-90, June 2007.
138. A. Feldman, G. Provan, and A.J.C. van Gemund, “Interchange Formats and Automated Benchmark Model Generators for Model-Based Diagnostic Inference”, In *Proc. 18th Int’l Workshop on Principles of Diagnosis (DX-07)*, Nashville, TN, pp. 91-98, June 2007.
139. A. Feldman, G. Provan, and A.J.C. van Gemund, “Approximate Model-Based Diagnosis Using Greedy Stochastic Search”, In *Proc. 18th Int’l Workshop on Principles of Diagnosis (DX-07)*, Nashville, TN, pp. 91-98, June 2007.
140. J. Pietersma and A.J.C. van Gemund, “Symbolic Factorization of Propagation Delays out of Diagnostic System Models”, In *Proc. 18th Int’l Workshop on Principles of Diagnosis (DX-07)*, Nashville, TN, pp. 170-177, June 2007.
141. H.G. Gross, A.J.C. van Gemund, “The Delft MS Curriculum on Embedded Systems”, In *Proc. Workshop on Embedded Systems Education, 6th ACM & IEEE Conference on Embedded Software (EMSOFT’06)*, Seoel, October 2006.
142. H.G. Gross, A.J.C. van Gemund, “Bridging the gap between non-formal and formal software component requirements specifications for embedded system engineering”, In *Workshop on Foundations and Applications of Component-based Design, 6th ACM & IEEE Conference on Embedded Software (EMSOFT’06)*, Seoel, October 2006.
143. A. Feldman, J. Pietersma and A.J.C. van Gemund, “A multivalued SAT-based algorithm for faster model-based diagnosis”, In *Proc. 17th Int. Workshop on Principles of Diagnosis (DX-06)*, Penaranda de Duero, Burgos, Spain, April 2006.
144. A. Feldman, A.J.C. van Gemund, A. Bos, “A Hybrid Approach to Hierarchical Fault Diagnosis,” *16th International Workshop on Principles of Diagnosis (DX’05)*, Monterey, June 2005. to appear.
145. H. Gautama and A.J.C. van Gemund, “A statistical approach to branch modeling in static program performance prediction,” in *Proc. IPDPS Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO’03)*, Nice, IEEE, Apr. 2003.
146. H. Gautama and A.J.C. van Gemund, “Towards performance estimation of data-dependent task parallel composition,” in *Proc. UK Performance Engineering Workshop (UKPerf’02)*, Glasgow, July 2002, pp. 81–92.
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148. H. Gautama and A.J.C. van Gemund, “Static performance prediction of data-dependent programs,” in *Proc. on The 2nd ACM International Workshop on Software and Performance (WOSP’00)*, Ottawa, ACM, Sept. 2000, pp. 216–226.
149. A. González Escribano, Valentín Cardeñoso Payo and A.J.C. van Gemund, “Measuring the performance impact of SP-restricted programming on distributed-memory machines,” in *Actas V Jornadas de Informatica*, Grupo de Arquitectura y Concurrencia, Granada, Sept. 2000, pp. 59–64.
150. A. Radulescu and A.J.C. van Gemund, “Fast and effective scheduling in heterogeneous systems,” in *Proc. Heterogeneous Computing Workshop (HCW’00)*, Cancun, IEEE, May 2000, pp. 229–238.
151. A. González Escribano, Valentín Cardeñoso Payo and A.J.C. van Gemund, “The expressiveness of spc synchronization model: A revision with examples,” in *Actas IV Jornadas de Informatica*, Grupo de Arquitectura y Concurrencia, Valencia, July 1998.
152. C. van Reeuwijk, A.J.C. van Gemund and H.J. Sips, “Spar: A programming language for semi-automatic compilation of parallel programs,” in *ACM 1997 Workshop on Java for Science and Engineering Computation*, ACM, June 1997.
153. J. Schier, H.J. Agterkamp, A.J.C. van Gemund, G.L. Reijns and H-X Lin, “Object tracking and tracing for multi-static FM-CW radar - incremental approach,” in *Proc. of 2nd IEEE Workshop on Computer-Intensive Methods in Control and Signal Processing (CMP’96)*, Prague, IEEE, Aug. 1996.

## 5.6 Int’l Workshops (By Invitation)

154. A. Varbanescu, H. Sips and A.J.C. van Gemund, “Programming and Performance Analysis of Generic MPSoC Platforms,” languages,” in *Proc. 12th Int’l Workshop on Compilers for Parallel Computers (CPC’06)*, La Curuna, Jan 2006, pp. 1-15.
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174. Henk Jonkers and A.J.C. van Gemund, “Prestaties van parallelle verwerking vallen tegen,” *Automatisering Gids*, Feb. 1996, pp. 11–12.

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## 5.9 Miscellaneous

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