Curriculum Vitae (summary)

Personal details

NAME	Dr. K. (Koen) G. Langendoen
POSITION	Professor of Computer Science Embedded and Networked Systems chair
CONTACT	Delft University of Technology Faculty of Electrical Engineering, Mathematics and Computer Science Mekelweg 4, 2628 CD Delft, The Netherlands Phone: +31 15 2787666 E-mail: k.g.langendoen@tudelft.nl Web: http://www.st.ewi.tudelft.nl/~koen

Brief biography

Koen Langendoen received an MSc in computer science from the Vrije Universiteit, Amsterdam in 1988 and a PhD in computer science from the Universiteit van Amsterdam in 1993. Dr. Langendoen participated as a post-doctorate researcher in two large projects: 1) the ORCA project (1993-1997) targeting parallel computing on large workstation clusters, and 2) the Ubicom project (1998-2002), a multidisciplinary research program in mobile multimedia communications. In 2001 Dr. Langendoen joined Delft University of Technology as an assistant professor. In 2004, Koen Langendoen was promoted to associate professor, and in 2008 he was appointed as full professor of the Embedded Software chair with the Computer Science department. In 2018, the chair was renamed to Embedded and Networked Systems to reflect the growing scope and broader interest of the group (currently 6 faculty, 2 postdocs, and 10 PhD students).

Activities and achievements

KEY PUBLICATIONS	• N. Brouwers, M.A. Zuniga, and K.G. Langendoen. "NEAT: A novel energy analysis toolkit for free-roaming smartphones". In *12th ACM Conf. on Embedded Networked Sensor Systems*, SenSys, pages 16–30. November 2014. • K. Langendoen, A. Baggio, and O. Visser. "Murphy loves potatoes: Experiences from a pilot sensor network deployment in precision agriculture". In 14th Int. Workshop on Parallel and Distributed Real-Time Systems (WPDRTS), Rhodes, Greece, April 2006. • T. van Dam and K. Langendoen. "An adaptive energy-efficient MAC protocol for wireless sensor networks". In *1st ACM Conf. on Embedded Networked Sensor Systems (SenSys 2003)*, Los Angeles, CA, November 2003. • J. Pouwelse, K. Langendoen, and H. Sips. "Dynamic voltage scaling on a low-power microprocessor". In *7th ACM Int. Conf. on Mobile Computing and Networking (Mobicom)*, Rome, Italy, July 2001. • H. Bal, R. Bhoedjang, R. Hofman, C. Jacobs, K. Langendoen, T. Rühl, and F. Kaashoek. "Performance evaluation of the Orca shared-object system". In *ACM Trans. on Computer Systems*, 16(1):1–40, February 1998.
SCIENTIFIC HONORS	• ACM MobiWac 2004, best paper award
CURRENT PROJECTS	• ENLIGHT'EM (H2020-MSCA-ITN. with IMDEA and others), senior member • Smart Sensing for Aviation (TKI, Delft), co-PI

(last updated on July 31, 2019)

Curriculum Vitae (full)

Personal details

Name	Dr. Koendert (Koen) Gustaaf Langendoen
Born	14 May 1965, Amsterdam, The Netherlands
Sex	Male
Nationality	Dutch
Marital status	Single, 3 children
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Education

April 1993	**PhD in Computer Science** "Graph reduction on shared-memory multiprocessors"	Supervisor: Prof. dr. L.O. Hertzberger Faculty of Mathematics and Computer Science University of Amsterdam, The Netherlands
May 1988	**MSc in Computer Science** cum laude	Faculty of Mathematics and Computer Science Vrije Universiteit, Amsterdam, The Netherlands
May 1983	**O.V.W.O.** (basic education)	Hervormd Lyceum West, Amsterdam, The Netherlands

Experience

Jun 08 - present	**Full professor** (HGL)	Department of Computer Science (faculteit EWI) Delft University of Technology, The Netherlands
Jan 11 - Jul 11	**Visiting researcher**	Queensland University of Technology, Australia & CSIRO, Brisbane, Australia
Jan 04 - May 08	**Associate professor** (UHD)	Department of Computer Science (faculteit EWI) Delft University of Technology, The Netherlands
May 06 - Aug 06	**Visiting researcher**	ETH Zurich, Switzerland
Aug 04 - Aug 06	**Consultant** (0.2 fte)	TNO-FEL, The Netherlands
Oct 01 - Dec 03	**Assistant professor** (UD)	Department of Computer Science (faculteit ITS) Delft University of Technology, The Netherlands
Jun 01 - Aug 01	**Visiting researcher**	UC Berkeley, CA, USA.
Feb 98 - Sep 01	**Researcher** (toegevoegd onderzoeker)	Department of Computer Science (faculteit ITS) Delft University of Technology, The Netherlands
Jan 93 - Jan 98	**Researcher** (toegevoegd onderzoeker)	Faculty of Mathematics and Computer Science Vrije Universiteit, Amsterdam, The Netherlands
Jun 92 - Dec 92	**Researcher** (toegevoegd onderzoeker)	Faculty of Mathematics and Computer Science University of Amsterdam, The Netherlands
Jun 88 - May 92	**PhD student** (AIO)	Faculty of Mathematics and Computer Science University of Amsterdam, The Netherlands

Research Interests

My research interest have shifted quite a bit over the years. From parallel programming at the start, via high-speed networking, mobile computing, and wireless sensor networks, to the Internet of Things today. The common line, however, is that I value experimental work (what you measure is what you get) at the systems level; with a focus on (wireless) communication protocols as they they provide the fundamentals for connecting people and things and foster effective collaboration. Doing that in the resource-constrained context of embedded (IoT) systems makes for interesting, unconventional solutions. Currently I am particularly interested in the following two topics.

Visible Light Communications. VLC holds the promise of unlimited bandwidth solving the spectrum crunch WiFi and other commodity wireless protocols are suffering from. The main challenge will be to take today's VLC to the embedded world where low-power is key, and communication distances of up to 10 meter need to be realized. In addition, light's direct-line-of-sight property also allows for sensing and localization services, greatly enlarging the application scenarios that will benefit from VLC.

Digital Twinning. Due to the massive scale of deployment, developing software for networked embedded systems has become on art instead of a science. Exhaustive testing is no longer an option, and proofing correctness is not for the faint of heart. The concept of digital twinning strikes a middle ground by comparing an actual system with a real-time simulation using the same inputs; a discrepancy between the outputs of the actual system and its digital counterpart may serve to signal broken components, be it hardware or software, or a modeling error. That improves engineering and understanding, respectively.

Management

Since my appointment as Assistant Professor in 2001, I have been involved in the acquisition and execution of many (collaborative) research projects supported by national Dutch, as well as European funding bodies. My role ha varied from task leader, to workpackage coordinator, to principal investigator. In the list below, the number of people under my direct supervision are mentioned.

ENLIGHT'EM	2019 - 2022	1 PhD student funded by the EU / H2020
Smart sensing for aviation	2017 - 2020	1 PhD student funded by TUD (TKI toeslag)
EWiDS	2012 - 2015	1 PhD student funded by COMMIT (min. EZ)
RELYonIT	2012 - 2014	1 postdoc funded by the EU / FP7
D2S2	2010 - 2013	1 postdoc + 1 PhD student, funded by STW
CONET	2008 - 2012	0.5 support, Network-of-Excellence funded by the EU
WISEBED	2008 - 2010	1 postdoc + 0.5 support (programmer), funded by the EU
ALwEN	2008 - 2011	1 PhD student, funded under Point One (Dutch gov.)
RELATE	2005 - 2008	1 postdoc + 1 support (programmer), funded by the EU
LOFAR-agro	2004 - 2008	0.2 postdoc, funded under BSIK (Dutch gov.)
Smart Surroundings	2004 - 2008	1 PhD student + 1 postdoc, funded under BSIK (Dutch gov.)
MilSens	2003 - 2007	1 PhD student, funded by TNO-FEL
Consensus	2002 - 2006	1 PhD student, funded by NWO (Dutch science foundation)
CACTUS	2002 - 2004	1 PhD student + 2 postdocs funded under Freeband
GigaMobile	2000 - 2002	1 PhD student funded by the Telematica Institute (Twente)

To develop my management and inter-personal skills I followed a 300 hours course in 2005 on Human Resource Management offered by Delft University to a few selected candidates. In 2009 I was coached by Aletta Wubben to become a more effective manager by becoming aware of behavioral patterns (including my own). In 2012 Miranda Diependaal coached me in understanding how to get the best out of people by leveling to their operational level of independence.

Supervision

- Faculty (UD/UHD)

M. Nasri (Oct 2018 - present)	Real-Time Systems
F. Kuipers (Jan 2017 - present)	Network Resilience
P. Pawelczak (Jan 2013 - present)	Wireless Networking
M. Zuniga (Oct 2012 - present)	Cyber Physical Systems
E. Onur (Sep 2012 - Jun 2013)	Wireless Communications
V. Prasad (Sep 2012 - present)	Internet of Things
S. Dulman (Jan 2010 - Jan 2013)	Large-Scale Adaptive Systems

- Postdocs

V. Gokhale (June 2019 - present)	Tactile Internet
Y. Hou (May 2018 - present)	Backscatter communication
V. Rao (Nov 2016 - Jan 2019)	Internet of Things
K. Chandra (Mar 2017 - Dec 2018)	60 GHz
Q. Wang (-)	Visible Light Communication
S. Yildirim (Jun 2015 - Nov 2017)	Backscatter communication
F. Aslam (Nov 2013 - Jan 2015)	Reliable IoT
A. Pruteanu (Jun 2013 - May 2014)	Distr. alg. for large-scale dynamic systems
P. Glatz (Sep 2011 - Aug 2012)	BirdTracking project
M. Woehrle (Oct 2010 - Jul 2012)	Dependable Distributed Sensor Systems
K. Muthukrishnan (Oct 2009 - June '10)	Localization for WSNs
A. Baggio (Aug 2004 - Oct 2008)	Localization in systems with mobile nodes
I. Haratcherev (April 2006 - June 2006)	Testbed development

- PhD students (AIO's)

S. Janssen (Apr 2016 - present)	Security and Efficiency of Airports (co-supervised with R. Curran)
A. Majid (Nov 2015 - present)	Intermittent Sensing (co-supervised with P. Pawelczak)
A. Uttama Nambi (Mar 2013 - May 2017)	Personalized Energy Services (co-supervised with V. Prasad)
C. Sarkar (Sep 2012 - Nov 2016)	Virtualizing The Internet of Things (co-supervised with V. Prasad)
Q. Liu (Mar 2012 - Dec 2016)	Self-Organizing Energy-Autonomous Syst. (co-supervised with P. Pawelcz
Y. Durmus (Mar 2012 - Oct 2016)	Autonomous Cooperation in IoT (co-supervised with E. Onur)
M. Cattani (Jan 2012 - Sep 2016)	Opportunistic Comm. in Extreme WNSs (co-supervised with M. Zuniga)
A. Loukas (Oct 2010 - present)	Dependable Distributed Sensor Systems (co-supervised with M. Zuniga)
N. Brouwers (Mar 2010 - Oct 2014)	Removing Roadblocks for Mobile Phone Sensing
A. Pruteanu (Jun 2009 - May 2013)	Highly Mobile WSNs (co-supervised with S.O. Dulman)
V. Iyer (Oct 2008 - Sep 2012)	Adaptability in Dynamic Wireless Networks (co-supervised with S.O. Dulr
G. Halkes (Sep 2004 - Aug 2009)	MAC Protocols for Wireless Sensor Networks and Their Evaluation
T. Parker (Aug 2003 - Jan 2008)	Rewriting the Sensor Network Abstraction Stack
I. Haratcherev (May 2001 - March 2005)	Application-oriented Link Adaptation for IEEE 802.11
J. Pouwelse (Feb 1998 - Oct 2003)	Power management for portable devices

- MSc students ('afstudeerprojecten')

TUD	1998-present	100+ students
VU	1993-1998	9 students (including 2 international students)
UvA	1988-1993	2 students

Teaching

After being appointed as Assistant Professor in 2001 I was enrolled in a novel university-wide program, aimed at having (new) faculty members master a wide range of teaching methods (lectures, classroom projects, distance learning, etc.). Part of the 250 hour course consisted of creating a portfolio listing competences at various teaching aspects. In November 2003 I was among the first three lecturers to obtain their BKO[1] certification as a professional educator. In 2010 I was elected 'lecturer of the year' by the students of the Christiaan Huygens study society associated with the CS department of Delft University of Technology.

I have lectured the following courses:

- **Embedded Systems Laboratory** (2018 - present) – compulsory course (5 EC) for MSc students (Embedded Systems). This course is a continuation of the Embedded RTS course (see below) with a minor extension regarding HW/SW co-design.
- **Computer Organization** (2017 - present) – compulsory course (5 EC) for BSc students (Computer Science). This course teaches the fundamentals of computer systems to the freshmen in their 1st year using *gamification* as the main didactic concept. This has proven to be a challenge with the number of enrolled students rising above 800 this year.
- **Embedded Software** (2013 - present) – elective course (5 EC) for BSc students (Computer Science). This course high lights the difficulties of programming embedded systems (data races, responsiveness, etc.) and involves a tutorial on programming in C.
- **Real-Time Systems** (2014 - 2018) – compulsory course (5 EC) for MSc students (Embedded Systems). This course teaches the fundamentals of scheduling policies for hard real-time systems. It is accompanied with by small labs involving a detailed look at the implementation intricacies on a (emulated) MSP430 microcontroller.
- **Embedded Real-Time Systems project** (2013 - 2017) – elective course (5 EC) for MSc students (Embedded Systems and Computer Engineering). The aim of this hands-on course is to familiarize students with the basics in signal processing, control theory, and avionics such that they can program an FPGA-based quadcopter to keep it balanced while hovering. In 2016 overhauled to work with a modern microcontroller (nRF51822).
- **Compiler construction** (2002-2009) – compulsory course (6 EC) for MSc students in Computer Science as well as for MSc students in Computer Engineering. The course consists of 12 two-hour lectures and a lab work in which students need to implement a peephole for x86 assembly.
  - Co-author of the "Modern Compiler Design" book by Grune et al. [6] used in this course.
- **Software Technology project 3** (2002-2003+2007-2011) – compulsory 2nd-year course (3 EC) for Computer Science students. In this new course groups of students collaborate as a team while working on a single project ('projectonderwijs'), in which they have to write embedded software for reading an accelerometer attached to a LART[2] and estimate the traveled distance by filtering out foot steps. In 2007 the project has been changed (under my supervision) to navigate an autonomous robot through a maze.
- **Wireless Sensor Networks seminar** (2007-2012) – elective course (5 EC) for MSc students in Computer Science consisting of 2 introductory lectures and 5 seminar-style lectures on special topics in WSNs. Students are assigned a topic, on which they have to read the available literature, select one state-of-the-art paper, and present that in class; others prepare by reading two classic papers.
- **Operating System concepten** (2008+2009) – compulsory course (3 EC) for 1st-year Computer Science students. This course introduces the basic OS concepts (scheduling, synchronization, etc.), which will be put to the test in the ST3 project in the 2nd year (see above).

[1] Basis Kwalificatie Onderwijs

[2] The LART is an in-house developed wearable computer based on a StrongARM SA-1100 processor [94]

Organizational activities

- **OCCEES chair** (2008-present) The Opleidings Commissie Computer Engineering and Embedded Systems consists of 4 student and 4 staff members advising the dean on teaching-related issues (ranging from quality control, to self assessments, to curriculum changes).
- **BSc curriculum** (2016-2017) The curriculum for the BSc track in computer science has been reworked to incorporate novel topics (like machine learning) and raise the academic level by changing the end project into an individual research assignment.
- **Excie CEES member** (2008-2011) The Examen Commissie Computer Engineering and Embedded Systems overlooks the examination profiles of the students enrolled in both MSc studies.
- **MSc curriculum** (2005-2006) The curriculum for the MSc track in computer science is being reworked to better interface with the revised BSc program and the influx of international students.
- **OCI member** (2004-2008) The Opleidings Commissie Informatica consists of 4 student and 4 staff members advising the dean on teaching-related issues (ranging from quality control, to self assessments, to curriculum changes).
- **MSc curriculum** (2005-2006) The curriculum for the MSc track in computer science is being reworked to better interface with the revised BSc program and the influx of international students.
- **FLS member** (2005-2006) The Facultaire Leerstoel Strategie committee consists of seven active researchers (mainly associate professors) advising the dean and management team on new lines of research that should be developed to provide Delft with a leading role in the (near) future.
- **Quadraad** (2004-2007) I served on the editorial board of the Quadraad magazine informing staff, faculty, and students about developments and achievements in research, teaching, and organization of the EEMCS department (faculteit EWI).

Professional activities

- Member of 50+ PhD defense committees of external candidates affiliated with a range of universities across Europe, including ETH Zurich, Lancaster, TU Eindhoven, TU Graz, UTwente, and VU Amsterdam.
- General chair of the
  - **15th ACM Conf. on Embedded Networked Sensor Systems (SenSys)**, 2017.
  - 4th European conference on Wireless Sensor Networks (EWSN), 2007.
- Program co-chair of the
  - Int. Conf. on Embedded Wireless Systems and Networks (EWSN), 2016 (with Thiemo Voigt).
  - REALWSN Workshop on Real-World Wireless Sensor Networks, 2013 (with Wen Hu).
  - **ACM Conf. on Embedded Networked Sensor Systems (SenSys)**, 2012 (with Andrew Campbell).
  - **IP track of the Int. Conf. on Information Processing in Sensor Networks (IPSN)**, 2011 (with Greg Pottie).
  - SPOTS track of the Int. Conf. on Information Processing in Sensor Networks (IPSN), 2009 (with Peter Corke).
- Workshops chair of the "4th IEEE Int. Conference on Distributed Computing in Sensor Systems (DCOSS '08)", 2008.
- Keynotes and invited lectures
  - "Constructive Interference - Back to the Drawing Board" (SCVT, 2016).
  - "IoT Quo Vadis" (Nyenrode Masterclass, 2015).
  - "IoT Quo Vadis" (Alten seminar, 2015).

  - "Wireless Sensor Networks, Hype or Reality?" (ASCI, 2010).
  - "Prototyping Wireless Sensor Networks; when theory meets practice" (SIREN, 2007).
- Panel member discussing
  - "IoT - 5G - Edge AI: challenges and opportunities" (ICCCN, 2019).
  - "Smart phones and big brothers" (MobiHoc, 2013).
  - "The future of Massively Parallel Processing" (ICA3PP, 1996).
- Lecturer at the CONET summer school "SENIOT: From Sensor Networks to Networked Intelligent Objects" (Bertinoro, Italy, 2009) and the summer school on "Wireless Sensor Networks and Smart Objects" (Schloss Dagstuhl, Germany, 2005).
- Tutorial "*MAC Protocols for Wireless Sensor Networks*" presented at the 2nd European Workshop on Wireless Sensor Networks (EWSN, Istanbul, Turkey, Jan 2005), and at the 1st IEEE Conference on Sensor and Ad Hoc Communications and Networks (SECON, Santa Clara, CA, 2004).
- Member of the editorial board of
  - The ACM Transactions on Sensor Networks (ToSN), 2007-2012.
- Program committee member of:
  - Int. Conf. on Information Processing in Sensor Networks (IPSN/SPOTS), 2007+2008-2012+2016+2020.
  - ACM Conf. on Embedded Networked Sensor Systems (SenSys), 2004+2005+2008+2010+2014+2015+2018.
  - European Conf. on Wireless Sensor Networks (EWSN), 2005-2015.
  - ACM Conf. on Mobile Systems, Applications, and Services (MobiSys), 2013.
  - Sensor Networks track of ICDCS 2006+2008+2009+2012.
  - The REALWSN Workshop on Real-World Wireless Sensor Networks, 2008+2010.
  - IEEE Conference on Computer Communications (INFOCOM), 2008+2009.
  - IEEE/ACM Int. Conf. on Distributed Computing in Sensor Systems (DCOSS), 2008.
  - IEEE Conf. on Sensor and Ad Hoc Communications and Networks (SECON), 2004+2006+2008.
  - European Conf. on Smart Sensing and Context, 2006+2007.
  - Conf. on Mobile and Ubiquitous Systems: Networks and Services (MobiQuitous), 2005+2006+2007.
  - Int. Conf. on Networked Sensing Systems (INSS), 2006+2007.
  - Workshop on RFID and Ubiquitous Sensor Networks (USN), 2005.
  - Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), 2005.
  - IEEE Workshop On Embedded Networked Sensors (EmNetS-II), 2005.
  - Pervasive 2005.
  - Conf. on High Performance Computing (HiPC), 2004.
  - 10th Annual Conf. of the Advanced School for Computing and Imaging (ASCI), 2004.
  - Workshop on Software Infrastructures for Component-Based Applications on Consumer Devices, 2002.
  - Workshop on Runtime Systems for Parallel Programming, 1997-2000.
- Reviewer for various international journals (including ACM Transactions on Sensor Networks, ACM Multimedia Systems Journal, IEEE Concurrency, IEEE Network, IEEE Pervasive Computing, IEEE Transactions on Mobile Computing, IEEE Transactions on Computers, IEEE Wireless Communications, MONET, and The Computer Journal)
- Reviewer for various (international) funding agencies regarding thematic programs in the areas of wireless and embedded systems in particular, and networked computer systems in general.

Publication list

In the field of computer science, conferences are typically chosen as the first means to disseminate scientific results. Sometimes, extended versions of conference publications are submitted (by invitation or not) to a journal, although journals also accept completely novel work. Professional magazines like IEEE Communications Magazine reach both academics and industry professionals, and therefore tend to have a high impact factor.

There is no univocal ranking of all networking conferences and journals, but the following table derived from the CORE ranking[3] may help in interpreting the publications listed below. An A* conference has an acceptance rate $\leq 20\%$, while an A ranking equates with an acceptance rate of $\approx 25\%$. Note that conferences/journals not mentioned may either have a lower acceptance rate (rank B or C) or are not indexed by CORE at all.

Acronym	venue	ranking	#papers
SenSys	ACM Conf. on Embedded Networked Sensor Systems	A*	4
IPSN	IEEE Conf. on Information Processing in Sensor Networks	A*	2
MobiCom	ACM Conf. on Mobile Computing and Networking	A*	1
ToCS	ACM Transactions on Computer Systems	A*	1
(journal)	Journal of Parallel and Distributed Computing	A*	1
FPCA (now ICFP)	Int. Conf. on Functional Programming	A*	1
HPCA	IEEE Symp. on High Performance Computer Architecture	A*	1
Percom	IEEE Conf. on Pervasive Computing and Communications	A*	1
EWSN	Conf. on Embedded Wireless Systems and Networks	A	3
Middleware	ACM/IFIP/USENIX International Middleware Conference	A	2
Computer Networks	Int. Journal of Computer and Telecommunications Networking	A	1
(journal)	Concurrency and Computation: Practice and Experience	A	1
(journal)	IEEE Transactions on Very Large Scale Integration Systems	A	1
USENIX	Usenix Annual Technical Conference	A	1
HICSS	Hawaii International Conference on System Sciences	A	1
ICDCS	International Conference on Distributed Computing Systems	A	1
IPPS	IEEE International Parallel Processing Symposium	A	1

Another useful source of information is **Google Scholar**, which measures impact by means of citation count and indexes virtually all venues. **H-index = 41, #cites = 12715**.

Finally, the papers marked in bold denote my personal view on the key research achievements since starting as a PhD student in 1988.

PhD Thesis

[1] K. G. Langendoen. *Graph reduction on shared-memory multiprocessors*. PhD thesis, Dept. of Comp. Sys, Univ. of Amsterdam, Apr 1993.

Books and book chapters

[2] D. Grune, K. van Reeuwijk, H. Bal, C. Jacobs, and K. Langendoen. *Modern Compiler Design (2nd edition)*. Springer, 2012.

[3] K. Langendoen. Medium access control in wireless sensor networks. In H. Wu and Y. Pan, editors, *Medium Access Control in Wireless Networks*, pages 535–560. Nova Science Publishers, Inc., May 2008.

[4] K. Langendoen and G. Halkes. Energy-efficient medium access control. In R. Zurawski, editor, *Embedded Systems Handbook*, pages 34.1 – 34.29. CRC press, 2005.

[3] http://www.core.edu.au/conference-portal

[5] K. Langendoen and N. Reijers. Distributed localization algorithms. In R. Zurawski, editor, *Embedded Systems Handbook*, pages 36.1 – 36.23. CRC press, 2005.

[6] D. Grune, H.E. Bal, C. Jacobs, and K. Langendoen. *Modern Compiler Design*. John Wiley & Sons, Chichester, England, 2000, ISBN 0-471-97697-0.

[7] K.G. Langendoen. *Graph reduction on shared-memory multiprocessors*. CWI Tract 117, Stichting Mathematisch Centrum, Amsterdam, The Netherlands, 1996, ISBN 90-6196-470-9.

Journal publications

[8] K.G. Langendoen C. Sarkar, R. Venkatesha Prasad. Fleet: When time-bounded communication meets high energy-efficiency. *IEEE Access*, 2019.

[9] Stef Janssen, Alexei Sharpanskykh, Richard Curran, and K.G. Langendoen. Using causal discovery to analyze emergence in agent-based models. *Simulation Modelling Practice and Theory*, 96:101940, 2019.

[10] R. Jurdak, K. Klues, B. Kusy, C. Richter, K.G. Langendoen, and M. Brünig. Opal: A multi-radio platform for high throughput wireless sensor networks. *Embedded Systems Letters*, 3(4):121–124, 2011.

[11] K. Langendoen and A. Meier. Analyzing MAC protocols for low data-rate applications. *ACM Transactions on Sensor Networks*, 7(2):1–40, 2010.

[12] G. Halkes and K. Langendoen. Practical considerations for wireless sensor network algorithms. *Wireless Sensor Network*, 2(6):441–446, jun 2010.

[13] T. Parker, G. Halkes, M. Bezemer, and K. Langendoen. The λMAC framework: redefining MAC protocols. *Wireless Networks*, 16(7):2013–2026, 2010.

[14] G. Halkes and K. Langendoen. Experimental evaluation of simulation abstractions for wireless sensor network MAC protocols. *EURASIP Journal on Wireless Communications and Networking*, 2010(601892):1–10, 2010.

[15] B. van der Doorn, W. Kavelaars, and K. Langendoen. A prototype low-cost wakeup radio for the 868 MHz band. *International Journal of Sensor Networks (IJSNet)*, 5(1):22–32, 2009.

[16] A. Baggio and K. Langendoen. Monte-carlo localization for mobile wireless sensor networks. *Ad Hoc Networks*, 6(5):718–733, 2008.

[17] M. Ali, U. Saif, A. Dunkels, T. Voigt, K. Römer, K. Langendoen, J. Polastre, and Z. Uzmi. Medium access control issues in sensor networks. *ACM SIGCOMM Computer Communication Review*, 36(2):33–36, April 2006.

[18] I. Haratcherev, J. Taal, K. Langendoen, R. Lagendijk, and H. Sips. Optimized video-streaming over 802.11 by cross-layer signaling. *IEEE Communications Magazine*, 44(1):115–121, January 2006.

[19] G. Halkes, T. van Dam, and K. Langendoen. Comparing energy-saving MAC protocols for wireless sensor networks. *Mobile Networks and Applications*, 10(5):783–791, October 2005.

[20] I. Haratcherev, J. Taal, K. Langendoen, R. Lagendijk, and H. Sips. Automatic IEEE 802.11 rate control for streaming applications. *Wireless Communications and Mobile Computing*, 5(4):421–437, June 2005.

[21] K. Langendoen and N. Reijers. Distributed localization in wireless sensor networks: A quantitative comparison. *Computer Networks*, (43):500–518, 2003.

[22] J. Pouwelse, K. Langendoen, and H. Sips. Application-directed voltage scaling. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, 11(5):812–826, 2003.

[23] H. E. Bal, R. Bhoedjang, K. Langendoen, and F. Breg. Experience with parallel symbolic applications in Orca. *Journal of Programming Languages*, 1998.

[24] Henri E. Bal, Raoul Bhoedjang, Rutger Hofman, Ceriel Jacobs, Koen Langendoen, Tim Rühl, and M. Frans Kaashoek. Performance evaluation of the Orca shared-object system. *ACM Transactions on Computer Systems*, 16(1):1–40, February 1998.

[25] Koen Langendoen, Raoul Bhoedjang, and Henri Bal. Models for Asynchronous Message Handling. *IEEE Concurrency*, 5(2):28–38, April 1997.

[26] Henri Bal, Raoul Bhoedjang, Rutger Hofman, Ceriel Jacobs, Koen Langendoen, Tim Rühl, and Kees Verstoep. Performance of a high-level parallel language on a high-speed network. *Journal of Parallel and Distributed Computing*, 40(1):49–64, January 1997.

[27] Pieter H. Hartel, Rutger F. H. Hofman, Koen G. Langendoen, Henk L. Muller, Willem G. Vree, and L. O. Hertzberger. A toolkit for parallel functional programming. *Concurrency: Practice and Experience*, 7(8):765–793, Dec 1995.

[28] M. Beemster, P. H. Hartel, L. O. Hertzberger, R. F. H. Hofman, K. G. Langendoen, L. L. Li, R. Milikowski, W. G. Vree, H. P. Barendregt, and J. C. Mulder. Experience with a clustered parallel reduction machine. *Future generation computer systems*, 9(3):175–200, Sep 1993.

[29] A. S. Tanenbaum, M. F. Kaashoek, K. G. Langendoen, and C. J. H. Jacobs. The design of very fast portable compilers. *ACM SIGPLAN notices*, 24(11):125–132, Nov 1989.

Conference publications

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