

CURRICULUM VITAE

Tom Kimpe
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RESEARCH & DEVELOPMENT • MANAGEMENT

Further personal information

- Nationality: Belgian
- Date of birth: September 1st, 1978
- Not married
- Driver's license: B

Education

- PhD in Electrical Engineering, University of Ghent, Belgium (2009). Thesis: "Techniques for Improving Image Quality of Medical Display Systems".
- Master of Science in Computer Engineering (option computer science & communication technology), University of Ghent, Belgium (2001). Master thesis: "Study of dependency speculation in superscalar processors", department ELIS, University of Ghent
- High school, Sint-Amandscollege Kortrijk, Latin-Mathematics 8h (1996)

Languages

- Dutch: mother tongue
- English: very good
- French: basic knowledge
- German: limited knowledge

Knowledge and skills

- Project management & general management
- Innovation management
- Intellectual property (define IP strategy, prior-art searches, writing patent texts)
- Funding projects (writing, defending and project management)
- Software: Visual Studio, C/C++, MatLab, Office, LaTeX
- Hardware: FPGA & CPLD design (VHDL), firmware
- Very good knowledge of image processing (compression, image enhancement, HVS modeling, ...)
- Display technology (LCD, LED, backlight, ...)

Working experience

- CTO, Medical Imaging Division, Barco (2007-now)
 - Defining technology & research roadmap and strategy
 - Follow up and coordinate worldwide research activities
 - Promoting innovation
 - Research partnerships (industrial and academic)
 - Intellectual property strategy
 - National and international funding projects
- Manager Technology & Innovation Group, Barco Medical Imaging Systems (2004-2007)
 - Defining technology & research strategy, steering and following up research activities of Barco Medical Imaging Systems worldwide
 - Responsible for an international group of engineers
 - Intellectual Property (determine IP strategy, writing patents in cooperation with agency)
 - Funding applications (IWT/IBBT/ITEA projects)
- Project Manager, Barco Medical Imaging Systems (2002-2004)
 - Project manager of several R&D projects for medical displays
 - Funding projects (IWT)
 - Medical approvals (FDA)
- Development Engineer Electronics, Barco Medical Imaging Systems (2001-2002)
 - Hardware (FPGA, CPLD), firmware (embedded processor) and software design for medical displays

Other professional activities

- Member of program committee SID 2006, 2007, 2008 & 2009
- Member of program committee 15th and 16th color imaging conference
- Expert around the topic image processing for IWT (Flemish funding organization)
- Reviewer for the Special Section of Journal of the SID on Image Quality
- Chair of session "Color, luminance and contrast (Applied Vision)" SID 2006
- Reviewer for "Journal of Digital Imaging"
- Reviewer for "journal of optical engineering"
- Teaching experience
 - Guest lecturer for the course "Biomedical Engineering and signal processing" at the University of Ghent (2007, 2008, 2009)
 - Lecturer for summer course on Biomedical Engineering at the University of Leuven (2006)
 - Guest lecturer at ULB (university of Brussels): "advanced applications in electronics" (course of prof. Frédéric Robert)
 - Assisting thesis students working on "psychovisual tests" (2006) and "Linux computation cluster to accelerate FPGA routing" (2005)

Hobby's

- Travelling
- Hiking
- Volleyball

Patents

- Methods and systems for stereoscopic imaging
Inventor: KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: EP1993294 - 2008-11-19
- Defect compensation and/or masking
Inventor: KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: EP1923860 - 2008-05-21
- Display system for viewing multiple video signals
Inventor: DE PAEPE LODÉ (BE); KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: WO2007059965 - 2007-05-31
- Server-client architecture in medical imaging
Inventor: TURNER DAVID (GB); PAPAGEORGIOU PAVLOS (GB); CHIN CONRAD (GB); YATES CARTER (GB); KIMPE TOM (BE)
Publication info: US2007115282 - 2007-05-24
- Method and device for improved display standard conformance
Inventor: KIMPE TOM (BE); DORVAL ETIENNE (BE) Applicant: BARCO NV (BE)
Publication info: WO2007014681 - 2007-02-08
- Methods, apparatus, and devices for noise reduction
Inventor: KIMPE TOM (BE); MATTHIJS PAUL (BE) Applicant: BARCO NV (BE)
Publication info: US2006262147 - 2006-11-23
- Method and device for image and video transmission over low-bandwidth and high-latency transmission channels
Inventor: KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: WO2006081634 - 2006-08-10
- Test or calibration of displayed greyscales
Inventor: KIMPE TOM (BE); DEROO DANNY (BE) Applicant: BARCO NV (BE)
Publication info: EP1662477 - 2006-05-31
- Backlight modulation for display
Inventor: KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: EP1650736 - 2006-04-26
- Optical correction for high uniformity panel lights
Inventor: KIMPE TOM (BE); VERSTRAETE GERRIT (BE) Applicant: BARCO NV (BE)
Publication info: EP1650730 - 2006-04-26
- Method and device for improving spatial and off-axis display standard conformance
Inventor: KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: WO2005101355 - 2005-10-27
- Method and device for visual masking of defects in matrix displays by using characteristics of the human vision system

Inventor: KIMPE TOM (BE) Applicant: BARCO NV (BE)
Publication info: WO2005052902 - 2005-06-09

- Method and device for avoiding image misinterpretation due to defective pixels in a matrix display
Inventor: KIMPE TOM (BE); MATTHIJS PAUL (BE) Applicant: BARCO NV (BE)
Publication info: EP1424673 - 2004-06-02
- Method and device for correction of matrix display pixel non-uniformities
Inventor: KIMPE TOM (BE); MATTHIJS PAUL (BE) Applicant: BARCO NV (BE)
Publication info: EP1424672 - 2004-06-02
- and other patents (still confidential, not yet published) in the domains of display systems, image processing, compression, human visual system modelling, optics, electronics, medical imaging.

Scientific publications

2009

- Optimization of medical imaging display systems: using the channelized Hotelling observer for detecting lung nodules – experimental study
L. Ilic, E. Vansteenkiste, Bart Goossens, C. Marchessoux, T. Kimpe and W. Philips. SPIE Medical Imaging 2009, February 7-12, Orlando, Florida, USA
- Learning approach for multi content analysis of compound images
Q. Besnehard, C. Marchessoux, T. Kimpe, G. Spalla, A. Joubel and F. Boudet. SPIE Electronic Imaging 2009, January 18-22, San Jose, California, USA

2008

- A software simulation framework to predict clinical performance of medical displays
Tom Kimpe, Cédric Marchessoux, Guillaume Spalla, Bart Goossens, Hans Hallez, Ewout Vansteenkiste, Steven Staelens and Wilfried Philips, Invited paper IDW 2008, December 3-5 2008, Niigata, Japan
- A virtual image chain for perceived and clinical image quality of medical display
Cédric Marchessoux, Tom Kimpe and Tom Bert, Invited paper IEEE/OSA Journal of Display Technology, September 2008
- A New Methodology for Clinical and Perceived Quality of Medical Displays
Cédric Marchessoux, Guillaume Spalla and Tom Kimpe, SID 2008, May 18-23 2008, Los Angeles, California, USA
- Improved display calibration algorithm for wide viewing angle DICOM GSDF compliance
Tom Kimpe and Cédric Marchessoux, SPIE Medical Imaging 2008, February 16-21 2008, San Diego, USA
- Extension of a human visual system model for display simulation
Cédric Marchessoux, Alexis Rombaut, Tom Kimpe, Brecht Vermeulen and Piet

Demeester, SPIE Electronic Imaging 2008, January 27-31 2008, San Jose, California, USA

- Increasing display performance over a wide range of viewing angles by means of improved calibration algorithms
Tom Kimpe and Gert Van Hoey, SPIE Electronic Imaging 2008, January 27-31 2008, San Jose, California, USA

2007

- Evaluating clinical performance of color and grayscale medical displays by means of a numerical observer
Tom Kimpe, Cédric Marchessoux and Guillaume Spalla, 93rd Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), November 25 - November 30 2007, Chicago, USA
- Evaluation of the new emerging JP3D standard for compression of volumetric medical data
Tom Kimpe and Tim Bruylants, 93rd Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), November 25 - November 30 2007, Chicago, USA
- MEDical Display Simulation Chain (MEDISIC): preliminary results
C. Marchessoux, T. Kimpe, H. Hallez, B. Goossens, E. Vansteenkiste, T. Bert, S. Staelens, I. Lemahieu, W. Philips, Medical Image Perception Society conference, October 17 - October 20, 2007, Iowa, USA
- Specificities of a psycho-physical test room dedicated for medical display applications
Cédric Marchessoux and Tom Kimpe, SID 2007, May 20-25 2007, Long Beach, USA
- Important aspects of grayscale imaging on color displays
Tom Kimpe, ECR 2007, March 9-13 2007, Vienna, Austria.
- Giga-, tera-, petabytes: Kan de radiologie ze nog aan?
R. De Klerck, J. De Mey, P. Dewaele, P. Dekeyser, T. Kimpe en B. Morlion, Het Ingenieursblad 02/2007
- Increasing the Number of Gray Shades in Medical Display Systems—How Much is Enough?
Tom Kimpe and Tom Tuytschaever, Journal of Digital Imaging, Springer New York, January 2007
- Compression of medical volumetric datasets: physical and psychovisual performance comparison of the emerging JP3D standard and JPEG2000
Tom Kimpe, Tim Bruylants, Yuri Sneyders, Rudi Deklerck and Peter Schelkens, SPIE medical imaging 2007, February 17-22 2007, San Diego, USA
- An optimized 3D context model for JPEG2000 Part 10
Tim Bruylants, Alin Alecu, Rudi Deklerck, Munteanu Adrian, Tom Kimpe and Peter Schelkens, SPIE medical imaging 2007, February 17-22 2007, San Diego, USA

- GPU Accelerated CT Reconstruction for Clinical Use: Quality Driven Performance
Michael S. Vaz, Yuri Sneyders, Matthew McLin, Alan Ricker and Tom Kimpe, SPIE medical imaging 2007, February 17-22 2007, San Diego, USA

2006

- Effect of display Nonuniformity on DICOM GSDF Compliance and Perception of Medical Images
Tom Kimpe and Yuri Sneyders, 92nd Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), November 26 - December 1 2006, Chicago, USA
- Seminar on Medical Display Systems
Tom Kimpe, ADEAC 2006 conference, October 23-26 2006, Atlanta, USA
- Important Differences Between Medical Displays and Normal Desktop Displays and Underlying Reasons
Tom Kimpe, conference proceedings ADEAC 2006, October 23-26 2006, Atlanta, USA
- Effect of non-uniformity on DICOM GSDF compliance of medical displays
Tom Kimpe and Yuri Sneyders, International Journal of Computer Assisted Radiology and Surgery, Volume 1, Supplement 1, pp. 35-36
- Current challenges in DICOM GSDF calibration for medical displays
Tom Kimpe, Danny Deroo and Albert Xthona, 48th AAPM annual meeting, July 30-August 3 2006, Orlando, Florida, USA
- Effect of non-uniformity on DICOM GSDF compliance of medical displays
Tom Kimpe and Yuri Sneyders, Computer Assisted Radiology 20th International Congress and Exhibition, June 28-July 1 2006, Osaka, Japan
- Improvement for DICOM GSDF Calibration for Medical Displays
Tom Kimpe, Danny Deroo and Geert Gheysen, SID symposium 2006, June 4-9 2006, San Francisco, California, USA
- Design of a light-guide used for the real-time monitoring of LCD-displays
W. Meulebroeck, Y. Meuret, C. Ruwisch, T. Kimpe, P. Vandenberghe, H. Thienpont, SPIE Photonics Europe, April 3-7 2006, Strasbourg, France
- Impact of defective pixels in AMLCDs on the perception of medical images
Tom Kimpe and Yuri Sneyders, SPIE Medical Imaging 2006, February 11-16 2006, San Diego, California, USA
- Human vision-based algorithm to hide defective pixels in LCDs
Tom Kimpe, Stefaan Coulier and Gert Van Hoey, SPIE Electronic Imaging 2006, January 15-19 2006, San Jose, California, USA
- Defective Pixels in Medical LCD Displays: Problem Analysis and Fundamental Solution
Tom Kimpe, Journal of Digital Imaging, Springer New York, January 2006, vol. 19, no. 1, pp. 76-84

2005

- Defective pixels in medical LCD displays: problem analysis and fundamental solution
Tom Kimpe, Stefaan Coulier and Etienne Dorval, SCAR 2005, Orlando, USA
- Solution for Nonuniformities and Spatial Noise in Medical LCD Displays by Using Pixel-Based Correction
Tom Kimpe et al, Journal of Digital Imaging, Springer New York, July 2005, vol. 18, no. 3, pp. 209-218
- Solving the problem of pixel defects in matrix displays based on characteristics of the human visual system
Tom Kimpe, Stefaan Coulier and Etienne Dorval, conference proceedings Eurodisplay 2005, September 19-22, Edinburgh, Scotland
- Solving the Problem of Defective Pixels in LCDs by Making Defects Invisible
Tom Kimpe and Stefaan Coulier, conference proceedings ADEAC 2005, October 24-27 2005, Portland, USA

2004

- Solution for non-uniformities and spatial noise in medical LCD displays by using pixel-based correction
Tom Kimpe, Albert Xthona, Paul Matthijs and Lode De Paepe, Conference proceedings SCAR 2004, Hot topics session, May 20-23 2004, Vancouver, Canada
- Spatial Noise and Non-Uniformities in Medical LCD Displays: Solution and Performance Results
Tom Kimpe, Albert Xthona and Paul Matthijs, Conference proceedings SID/ADEAC 2004, October 25-27 2004, Ft. Worth, USA
- Increasing Image Quality of Medical LCD Displays by Removing Spatial Noise and Luminance Non-uniformities
Tom Kimpe, Paul Matthijs, Albert Xthona and Lode De Paepe, RSNA 2004, December 3rd 2004, Chicago, USA