Jens Michael Carstensen, Assoc. Professor, CTO.
Born 22 August 1963 in Slagelse; Age 45; M.Sc.Eng. (1988); Ph.D. (1992).

Positions

Research specialist, University of Pennsylvania, Philadelphia, USA	1986-1987
Research engineer, AT&T Bell Laboratories, Allentown, USA	1988-1989
Post. Doc., IMM/DTU	1992-1994
Assistant professor of image analysis, IMM/DTU	1994-1997
Associate professor of image analysis, IMM/DTU	1997-present
Chief Technology Officer, founder, member of the board, Videometer A/S	1999-present

Scientific qualifications and research areas
Main research areas are image analysis and vision technology. Focus has been on statistical methods and models for handling high-dimensional image data in several areas such as texture analysis and multispectral imaging. JMC has developed new models for texture and shape based on Markov Random Fields in a Bayesian framework. These models have created new possibilities in areas such as high-throughput screening in biotechnology, mapping of crustal deformations for satellite and GPS data, and 3D simulation of oil reservoirs. The work has to a large extent been application-driven with many applications within industrial production, food, and biotechnology. JMC was responsible for establishing the Industrial Image Laboratory at DTU in 1995, and has received many research grants from EU, national research councils, ministries, Nordic Industry Fond, and industry. From 1997 JMC has been chairing the annual industrial visionday at DTU with app. 100 participants from industry and academia. JMC is a key developer of several vision-based instruments e.g. the VideometerLab in 2001 (Foodtech Innovation Award 2003, EU patent in 2003, US patent in 2005), the VideometerSLS in 2004 (subsurface laser scattering), the VideometerSGT in 2006 (Surface gloss topography), and the VideometerLiq (Liquid/emulsion/suspension/foam stability) in 2009. JMC has received two patent families, and two patent applications are pending. In 1999 JMC founded Videometer – a private vision R&D company, and during the last 8 years JMC has been overall responsible for app. 200 commercial R&D projects.

Selected recent publications and patents

Carstensen, J. M., Multispectral Imaging offers new tools, *Vision systems design, 3 pp., March, 2007*

Kapel, C. M. O., Hammeken, N., Carstensen, J. M., Dalum, L., A method and a system for detection of trichinella larvae in meat samples, *Patent Application WO02006034716*, 2006

Christensen, S. F., Johannsen, I., Carstensen, J. M., Kuhlmann, L., Meldal, M., Identification of encoded beads, *Patent EP1701784,* 2006

Carstensen, J. M., Hansen, M. E., Lassen, N. C. K., Hansen, P. W., Creating surface chemistry maps using multispectral vision technology, *Proceedings of the MICCAI Workshop on Biophotonics Imaging for Diagnostics and Treatment,* pp. 19-27, Copenhagen, Denmark, 2006.

Hansen, M. E., Ersbøll, B. K., Carstensen, J. M., Nielsen, A. A., *Estimation of Critical Parameters in Concrete Production Using Multispectral Vision Technology*, Lecture Notes in Computer Science, LNCS3540, pp. 1228-1237, 2005

Braithwaite, I., Blanke, M., Zhang, G., Carstensen, J. M., Design of a vision-based sensor for autonomous pig house cleaning, *Eurasip journal on Applied Signal Processing*, vol. 2005(13), pp. 2005-2017, 2005

Hansen, M. E., Carstensen, J. M., Density based retrieval from high-similarity image databases, *Pattern Recognition*, vol. 37(11), pp. 2155-2164, 2004

Hansen, M. E., Lund, F., Carstensen, J. M., Visual clone identification of penicilium commune isolates, *Journal of Microbiological methods*, vol. 52, pp. 221-229, 2003

Carstensen, J.M., Folm-Hansen, J., An apparatus and a method of recording an image of an object, *Patent family EP1051660, Issued in 2003.*

Hartelius, K., Carstensen, J. M., Bayesian grid matching, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25(2), pp. 162-173, 2003