

Undervisnings CV

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Undervisningsområder

Datateknologi
Elektronik
Embedded Software
Signalintegritet, EMI & EMC
Robotteknologi
Velfærdsteknologi
Signalbehandling
Reguleringsteknik
Træningsteknologi
System On Chip
FPGA

Employment

Associate Professor

The Maersk Mc-Kinney Moller Institute
University of Southern Denmark
Odense M
1. Jan 1998 → present

Associate Professor

SDU Health Informatics
University of Southern Denmark
1. Jan 1998 → present

Associate Professor

SDU Galaxy
University of Southern Denmark
Odense M, Denmark
1. Jan 1998 → present

Undervisningserfaring

Jeg har deltaget i planlægning af universitetsundervisning siden jeg som formand for de datateknologiske studenrede forening FADSO, i perioden 1993-95 tog initiativ til et række omfattende reformforslag, der via de studerendes arbejde i studienævnenet næsten alle blev gennemført. Jeg har efterfølgende (2003) stået for planlægningen af 2 overbygningsprofiler til civilingeniøruddannelsen i datateknologi (senere robotteknologi), og selv stået for undervisningen af de fleste kurser på "Embedded systems" indtil 2006.

Jeg har vejledt universitetsstuderende siden jeg som studerende grundlagde "Hardware interessegruppen" i 1995. Jeg deltog som instruktør på sommerkurset i AGV teknologi ved SDU i 1997. Senere overtog jeg ansvaret for kurset som PhD. stipendiat i 1999, 2000 og senere som adjunkt. Kurset har i den periode anvendt min specialrapport "Praktisk AGV konstruktion" som lærebog på kurset.

Jeg har udviklet civilingeniøruddannelsen i velfærdsteknologi, og efterfølgende gradvist flyttet min undervisning fra datateknologi & robotteknologi til denne uddannelse.

Parallelt med traditionel undervisning har jeg en stor rolle som vejleder fra bachelor til Ph.D. niveau. Jeg har erfaring med vejledning i spændet mellem Datateknologi, Elektronik, Robotteknologi og velfærdsteknologi.

Nuværende kurser

Fysisk interaktiv Software

Cyber Physical interfacing

Dynamiske systemer

Reguleringsteknik

Vejledning

Phd Vejledning: Datateknologi & Robotteknologi

Speciale Vejledning: Datateknologi, Robotteknologi & Velfærdsteknologi

Bachelor/diplom vejledning: Datateknologi, Elektronik, Robotteknologi & Velfærdsteknologi

Pædagogisk grundsyn

Praktisk forståelse af relevant teori gennem anvendelse i vedkommende problemstillinger. Den studerendes egen erkendelse af sammenhænge mellem teori og praksis er afgørende, hvorfor en adaptation af den Sokratiske metode er foretrukket.

Jeg lægger vægt på personlig udvikling af den enkelte studerende gennem integration af dyb grundfaglig forståelse og dyb problemforståelse. Levendegørelse af stoffet gennem et udgangspunkt i konkrete og virkelige problemer, hentet fra igangværende forsknings- eller udviklingsprojekter. Fokus på at tænke teoretiske værktøjer ind i de enkelte studerendes fagområde eller interesseområde. Aktivisering af stoffet gennem anvendelse i praksis og afmystificering gennem relation til kendte områder, og gennem anvendelse af personlig erfaring, erkendelse og humor.

Metodisk og principiel og formidlingsmæssig hovedinspiration: Lao Tze, Sokrates, Marcus Porcius Cato, Søren Kirkegaard, Richard Feinman, Howard Gardner, Peter Bastian, Sten Wikke, Michael Rasmussen, Edmund Christiansen og Jan Pedersen.

Pædagogisk uddannelse

Ingeniørhøjskolen Odense Teknikums pædagogiske grundkursus - 2003

Ph.D. skolen, Syddansk Universitet

Activities

Partnerskabet Space Exploration Danmark (External organisation)

Nicolai Iversen (Member) & Anders Stengaard Sørensen (Member)

Dec 2020 → Dec 2022

Trauma recovery

Anders Stengaard Sørensen (Participant)

4. Mar 2020

welfare technologies and the laboratory for robot-assisted training

Anders Stengaard Sørensen (Guest lecturer)

3. Apr 2019

Augmented Gravity: Robotassisteret træning

Anders Stengaard Sørensen (Guest lecturer)
2. Apr 2019

14th Annual ACM/IEEE International Conference on Human-Robot Interaction, HRI 2019

Anders Stengaard Sørensen (Participant), Gitte Rasmussen (Participant) & Jorge Solis (Participant)
11. Mar 2019

Social intelligence in Kinesthetic, Personalized, Adaptive Human-Robot Interaction

Jorge Solis (Organizer), Anders Stengaard Sørensen (Organizer) & Gitte Rasmussen (Organizer)
27. Aug 2018 → 29. Aug 2018

The resistance training sensor

Anders Stengaard Sørensen (Lecturer)
4. Dec 2014

Robotten som genoptræningsmakker

Anders Stengaard Sørensen (Lecturer)
20. Nov 2014

Versatile but accurate biofeedback and tele-training, rooted in resistance bands

Anders Stengaard Sørensen (Lecturer)
28. Oct 2014

Velfærdsteknologi i dag og i morgen: Perspektiver og scenarier over fremtidens velfærdsteknologier

Anders Stengaard Sørensen (Lecturer)
11. May 2010

University of Southern Denmark (External organisation)

Anders Stengaard Sørensen (Member)
29. Apr 2010 → 1. May 2010

University Technology Matchmaking Biotechnology and Medico-technology

Anders Stengaard Sørensen (Participant)
27. Apr 2010

University of Southern Denmark (External organisation)

Anders Stengaard Sørensen (Member)
5. Apr 2010 → 21. Apr 2010

Design of the masters education in welfare technology: The curriculum of the education

Anders Stengaard Sørensen (Advisor)
2. Dec 2008 → 30. Jun 2009

Technology forecast - Cognition and robotics: Working report about robot technology research in Denmark

Anders Stengaard Sørensen (Advisor)
10. Mar 2005 → 30. May 2005

Research outputs**Data Visualization Dashboards in Robotic Rehabilitation**

Liakopoulou, C., Mansourvar, M., Bøglid, A., Naemi, A. & Stengaard Sørensen, A., 27. May 2021, *Public Health and Informatics*. Mantas, J., Stoicu-Tivadar, L., Chronaki, C., Hasman, A., Weber, P., Gallos, P., Crişan-Vida, M., Zoulias, E. & Chirila, O. S. (eds.). IOS Press, Vol. 281. p. 278-282 (Studies in Health Technology and Informatics).

ROS-Enabled Hardware Framework for Experimental Robotics

Steckhahn-Strohmer, B., Bøgild, A., Sørensen, A. S. & Larsen, L. B., Dec 2019, *Proceedings of International Conference on Reconfigurable Computing and FPGAs*. Andrews, D., Cumplido, R., Feregrino, C. & Platzner, M. (eds.). IEEE, 2 p.

Bodily Human Robot Interaction

Solis, J., Sørensen, A. S. & Rasmussen, G., 22. Mar 2019, *14th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. IEEE, p. 683-684

RoBody Interaction: A New Approach at Kinesthetic Human Robot Interaction

Sørensen, A. S. & Rasmussen, G., Nov 2018, *Proceedings of the 27th IEEE International Symposium on Robot and Human Interactive Communication: RO-MAN*. IEEE, p. 893-900 (IEEE RO-MAN proceedings).

Individualised and adaptive upper limb rehabilitation with industrial robot using dynamic movement primitives

Nielsen, J., Sørensen, A. S., Christensen, T. S., Savarimuthu, T. R. & Kulvicius, T., 2017. 4 p.

Natural Kinesthetic Interaction and Social Relations Between Training-Robots and Their Users

Sørensen, A. S., Nielsen, J., Maagaard, J., Nielsen, J. L., Rasmussen, G. & Day, D., 2017. 1 p.

Student to student teaching in a robot electronics course

Skriver, M. & Sørensen, A. S., 2017, *Exploring Teaching for Active Learning in Engineering Education: Book of Abstracts*. p. 121 1 p.

New exercise-integrated technology can monitor the dosage and quality of exercise performed against an elastic resistance band by adolescents with patellofemoral pain: an observational study

Rathleff, M. S., Bandholm, T., McGirr, K. A., Harring, S. I., Sørensen, A. S. & Thorborg, K., Jun 2016, In: *Journal of Physiotherapy*. 62, 3, p. 159-63

Low-cost modular robotic system for neurological rehabilitative training

Sørensen, A. S., Nielsen, J., Maagaard, J., Skriver, M., Lin, C-C. & Schultz, U. P., 19. May 2016, *Proceedings - 2016 IEEE International Conference on Industrial Technology, ICIT 2016*. IEEE Press, p. 1585-1591

Adherence to commonly prescribed, home-based strength training exercises for the lower extremity can be objectively monitored using the Bandcizer

Rathleff, M. S., Thorborg, K., Rode, L. A., McGirr, K., Sørensen, A. S., Bøgild, A. & Bandholm, T., 2015, In: *Journal of strength and conditioning research / National Strength & Conditioning Association*. 29, 3, p. 627-636

Designing of low-cost 1-DOF Robot Device

Sørensen, A. S. & Maagaard, J., 2014, Syddansk Universitet. Mærsk Mc-Kinney Møller Institut. 5 p. (Technical Reports - Maersk Mc-Kinney Møller Institute, University of Southern Denmark, Vol. 2014-1).

Detection of needle insertion point for phlebotomy in human forearms

Savarimuthu, T. R. & Sørensen, A. S., 2014, In: *International Journal of Mechanics and Control*. 15, 1, p. 61-67

Kinesthetic human/robot coordination: The coordination of movements for interaction

Sørensen, A. S., Rasmussen, G. & Day, D., 2014, *HRI 2014 - Proceedings of the 2014 ACM/IEEE International Conference on Human-Robot Interaction*. Association for Computing Machinery, p. 292-293

Towards Using a Generic Robot as Training Partner: Off-the-shelf robots as a platform for flexible and affordable rehabilitation

Sørensen, A. S., Savarimuthu, T. R., Nielsen, J. & Schultz, U. P., 2014, *Proceedings of the 9th ACM/IEEE International Conference on Human-Robot Interaction*. Association for Computing Machinery, p. 294-295

Towards Automatic Migration of ROS Components from Software to Hardware

Lange, A. B., Schultz, U. P. & Sørensen, A. S., 8. Nov 2013, *Proceedings of the Fourth International Workshop on Domain-Specific Languages and Models for Robotic Systems*. 4 p.

Unity-Link: A Software-Gateway Interface for Rapid Prototyping of Experimental Robot Controllers on FPGAs

Lange, A. B., Schultz, U. P. & Sørensen, A. S., 3. Nov 2013, *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*. IEEE, p. 3899-3906

Sensorenhed til kvantificering af fysisk træning med elastik

Sørensen, A. S., Nov 2013, IPC No. pa2012 00312, 7. May 2012

Unity: A Unified Software/Hardware Framework for Rapid Prototyping of Experimental Robot Controllers using FPGAs

Lange, A. B., Schultz, U. P. & Sørensen, A. S., 6. May 2013. 4 p.

A Doppler RADAR sensor for trampoline jumping

Sørensen, A. S., 2013, Patent No. PA 2013 70134, 8. Mar 2013

HartOS - A hardware implemented RTOS for hard real-time applications

Lange, A. B., Andersen, K. H., Schultz, U. P. & Sørensen, A. S., 23. May 2012. 6 p.

An FPGA based approach to increased flexibility, modularity and integration of low level control in robotics research

Falsig, S. & Sørensen, A. S., 2011, *International Conference on Intelligent Robots and Systems (IROS), 2010 IEEE/RSJ*. IEEE, p. 6119-6124

Real-time medical video processing, enabled by hardware accelerated correlations

Savarimuthu, T. R., Kjaer-Nielsen, A. & Sørensen, A. S., 2011, In: *Journal of Real-Time Image Processing*. 6, 3, p. 187-197 11 p.

A System on Chip approach to enhanced learning in interdisciplinary robotics

Sørensen, A. S. & Falsig, S., 22. Oct 2010, *2010 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, p. 4050-4056

Velfærdsteknologi i rugekassen: Hvad er velfærdsteknologi

Sørensen, A. S., 7. May 2010, In: *Mandag Morgen*. p. 14-17 4 p.

A step toward 'plug and play' robotics with SoC technology

Sørensen, A. S., Falsig, S. & Ugilt, R., 2010. 4 p.

An FPGA based Node-on-Chip Architecture, for Rapid Robotics Research

Falsig, S. & Sørensen, A. S., 2010.

Improving the quality of near-infrared imaging of in vivo blood vessels using image fusion methods

Jensen, A. K., Savarimuthu, T. R. & Sørensen, A. S., 1. Dec 2009, *Proceedings of the IASTED International Conference on Modelling, Simulation, and Identification, MSI 2009*.

TosNet: An easy-to-use, real-time communications protocol for modular, distributed robot controllers

Falsig, S. & Sørensen, A. S., 2009, *Proceedings*. Robocomm, p. 1-6 6 p.

A Real-Time Embedded System for Stereo Vision Preprocessing Using an FPGA

Kjær-Nielsen, A., Jensen, L. B. W., Sørensen, A. S. & Krüger, N., 2008, *Reconfigurable Computing and FPGAs, 2008. ReConFig '08. International Conference on*. IEEE, p. 37-42

DETECTION OF VESSELS IN HUMAN FOREARMS USING 2D MATCHED FILTERING

Savarimuthu, T. R. & Sørensen, A. S., 2008, *Signal and Image Processing 2008*. Cristea, P. D. (ed.). ACTA Press, p. 294-299 6 p.

Tactile Sensing Methods for Automated Blood Samples On Humans

Sørensen, A. S. & Savarimuthu, T. R., 2008, *Advances in mobile robotics: Proceedings of the Eleventh International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines*. USA: World Scientific, Vol. 1. p. 875-889 15 p.

Automated production of one-of-a-kind fiber compositepreforms

Sørensen, A. S. & Dalgaard, L., 2006, *Proceedings of the 12th IASTED International Conference: Robots And Applications*. ACTA Press, p. 73-78 6 p.

Implementation of a practical reconfigurable manipulator system based on hybrid parallel and sequential elements

Sørensen, A. S., Jakobsen, O. G., Favrholt, P., Petersen, H. G., Jacobsen, N. J. & Steinicke, J., 2004, *International Conference on Intelligent Manipulation and Grasping (IMG04)*. p. 404-409

A development of parallel robotic modules for long reach applications

Sørensen, A. S., Petersen, H. G., Jacobsen, N. J. & Jakobsen, O. G., 2001

Experiments in ergonomic robot-guided manipulation

Sørensen, A., Liu, C., Kim, S. M., Lynch, K. M. & Peshkin, M. A., 2000

Towards a generic controller for arbitrary robotic manipulators

Joosen, W., Jørgensen, B. N., Linder, S. M., Olsen, M. M., Perram, J. W., Petersen, H. G., Ruhoff, P. T., Sørensen, A., Sørensen, A. S. & Wagenaar, J. M., 2000, *Proceedings of IASTED International Conference on Robotics and Applications*. p. 34-40