

## Teaching portfolio

### 1. Teaching CV: A list of any lecturing and supervision tasks, including specification of academic fields, scope, level (bachelor, master, continuing education, PhD) as well as any external examiner tasks.

#### MASTER LEVEL COURSES TAUGHT AT AALBORG UNIVERSITY

1. APEL7 - Conditioning Monitoring and Product Life Cycle Fall 2020
2. MED8 – Artificial Intelligence in Embodied Interaction, Spring 2015
3. IIS2 – Scalable Information Systems, Spring 2013
4. IIS2 – Socially Intelligent Computing, Spring 2013
5. IIS1 – Intelligent Systems, Fall 2012
6. IIS1/F7S/CIS1 – Fuzzy Logic, Fall 2012, Fall 2010
7. IRS9 – Fault Tolerant Computing, Fall 2012, Fall 2008, Fall 2007, Fall 2006, Fall 2005
8. IRS2 – Fuzzy Logic and Artificial Neural Networks for Engineering, Spring 2012
9. F8S/CIS2 – Information Retrieval, Spring 2010, Spring 2006
10. F9S/CIS1 – Database Management Systems, Spring 2011
11. F7S – Programming Paradigms, Fall 2010, 2011
12. DAT3- Programming Paradigms Spring 2007
13. F7S – Philosophy of System Development, Fall 2007, Fall 2006
14. F7S - Distributed Systems Fall, 2004, 2005, 2006, 2007
15. CIS2 – Design of Graphical User Interfaces, Spring 2004
16. CIS1 – Technical Organization and Leadership, Fall 2008, Fall 2007
18. IRS7 – Distributed Real Time Systems, Fall 2011

#### BACHELOR UNDERGRADUATE COURSES TAUGHT AT AALBORG UNIVERSITY

19. ED4 - Power Electronics and Networks (only the Networks part of the course), Spring 2016
20. ED6 - Distributed Systems, Spring 2016, Fall 2011, Fall 2008, Fall 2005, Fall 2004
21. ED5 – Operating Systems and Network Data Communications, Fall 2015, Fall 2014, Fall 2013
22. ED1 – Imperative Programming, Fall 2015, Fall 2014
- MED4, ED4 – Object Oriented Software Engineering, Spring 2015
23. ED3 – Data Structures and Analysis of Algorithms, Fall 2014
24. ED6 - Distributed Systems, Spring 2014, Fall 2010
25. MED3 – C/C++ Programming Fall 2014, Fall 2010, Spring 2010
26. DE4 – Object Oriented Programming and Architectural Design, Spring 2009, Spring 2008, Spring 2007
27. DE5 – Methods for Design of Embedded Systems, Fall 2006, Fall 2005. Spring 2006
28. DE6 – Probability, Statistics and Stochastic Processes, Spring 2012, 2011, 2010
29. ED6 -Introduction to Probability and Statistics Spring 2017, 2018, 2019, 2020
30. ED6- Matrix Computation and Convex Optimization Spring 2019, 2020
31. AI2/EN4 - Real Time Systems and Programming Languages Spring 2018, 2019, 2020
32. ED5- Real Time Embedded Systems Fall 2017, 2018, 2019

#### SUPERVISION

##### Phd CoAdvisor

1. Hossein Yazdani. "Clustering Through Possibilistic Approaches". Co-advisor with Halina Kwasnicka, Institute of Informatics, Wroclaw University of Technology. Graduation date: November 2019.
2. Juan Evencio Guzmán Trampe. "Automatic Generation of Classifiers through Genetic Programming". Co-advisor together with Dr. Nareli Cruz Cortés. Graduation date: 2016. Center for Research in Computing (CIC-Centro de Investigaciones en Computación). IPN, México.

##### PhD Committee Chair

1. Jacobo Rouces. Thesis "A Frame-Based Approach for Integrating Heterogeneous Knowledge Sources", Aalborg University, Copenhagen June 13, 2016
2. Arifa Bhutto, Thesis "Verification and Validation of UML/OCL object component model", Aalborg University, Esbjerg September 2018
3. Sheeraz Niaz Lighhari, Thesis "Security Analytics of Large Scale Streaming Data", Aalborg University, Esbjerg September 2018

External evaluator of MSc Thesis in University of Anger Universitetet i Agder Faculty of Engineering and Science Norway  
Development of soft sensor for monitoring and control of Silicon Carbide production Karoline Frisvoll, Spring 2020

Supervision and graduation of 18 students in the master degree in Software Development in CIS4 semesters

1. Damian Bukczynsky "Automatic Email Categorization." MSc. Graduation date November 4th 2013. Department of

- Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
2. Mikkel Krautz "Construction and Evaluation of a Modern Microkernel." MSc. graduation date June 20th 2012. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  3. Hossein Yazdani. "A Fuzzified Particle Swarm Optimization Algorithm." MSc. graduation date June 2011. Co-advised with Dr. Halina Kwasnicka, Institute of Informatics, Wroclaw University of Technology, Poland.
  4. Domenico Carlone. "A Recommendation System Based on Natural Language Processing". MSc. Graduation date June 12th 2011. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  5. Søren Atmakuri Davidson. "Edge Prediction in Complex Networks with Temporal Information". MSc. Graduation date June 12th 2010. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  6. Jens Rune Poulsen. "Fuzzy Time Series Forecasting: Developing a new Forecasting Method Based on High Order Fuzzy Time Series", MSc. Graduation date November 18th, 2009. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  7. Domenico Solazzo. "SubClassifier: Automatic Text Categorization of Patents Using Subgroup Discovery". Graduation date August 12th, 2009. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  8. Jakob Ehmsen. "A Domain Specific Meta Language to Abstract Concurrency Concerns in Multicore Computers". Graduation date August 17th, 2009. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  9. Boris S. Jensen. "Efficient Supervised Reinforcement Learning in Backgammon". Graduation date June 22nd, 2009. Department of Electronic Systems, Esbjerg Institute of Technology, Aalborg University, Denmark.
  10. Michael M. Rahbek. "Performance of Entropy Measure when Applied to Real Social Networks", MSc. Graduation date January 26th, 2009. Computer Science Department, Aalborg University Esbjerg, Denmark.
  11. Christian Køfold. "Aulos: Automatic Classification of Music Genre", MSc. Thesis. Graduation date 24th January 2008. Computer Science Department, Aalborg University Esbjerg, Denmark.
  12. Hans Ulrich Christensen. "Exploring the use of Fuzzy Logic and Data Fusion Techniques in Passage Retrieval for Question Answering", MSc. Thesis. Graduation date January 18th 2007. Computer Science Department, Aalborg University Esbjerg, Denmark.
  13. Mark Fabian Christensen. "Link Discovery on the ENRON Email Corpus", MSc. Thesis. Graduation date January 18th 2007. Computer Science Department, Aalborg University Esbjerg, Denmark.
  14. Niels Nygaard Nielsen. "Intelligent Game Agents: Improving a Fuzzy Controller Based Backgammon Player". MSc. Thesis. Graduation date January 18th 2007. Computer Science Department, Aalborg University Esbjerg, Denmark.
  15. Henrik Mathiasen. "Automatic Classification of Patents". MSc. Computer Science Department, Aalborg University Esbjerg, Denmark, Graduation date June 15th 2006.
  16. Quang Huynh. "Electricity Load Forecast Using Neural Networks". MSc. Computer Science Department, Aalborg University Esbjerg, Denmark Graduation date June 15th 2005.
  17. Morten Krogh Skov. "Electricity Load Forecast Using Neural Networks". MSc. Computer Science Department, Aalborg University Esbjerg, Denmark, Graduation date June 15th 2005.
  18. Mikael Heinze. "Intelligent Game Agents – Developing an Adaptive Fuzzy Controller Backgammon Agent". MSc. Computer Science Department, Aalborg University Esbjerg, Denmark, Graduation date January 20th 2005.

#### Supervision of BSc graduate thesis

1. Sergio Hernandez Fernandez, Real-Time Voice Enhancement for Edgedevices using Deep Learning, July 2020
2. Fikrican Ozgur, Devrat Singh, Codrin-Matei Caciuleanu, LiDAR-based 2D EKF SLAM for Indoor Environments 2 July 2020
3. Tomer Tchelet, Kamil Wojciech Mikolaj, Martin Lauersen, Deep Neural Network Trained on Synthetic Dataset for Quadcopter Navigation, July 2020
4. Marco Fiasco Mobile Claus Christiansen, Robot localization and navigation in static and dynamic environments, July 2019
5. Razvan-Vlad Bucur, Titas Lasickas, Darius Chira, ROS Implementation of Object Detectio, July 2019
6. Alexandra Alexandra-Dorina Török. Improving bicycle safety through real-time animal detection and classification, July 2018
7. Andrius Kulsinskas, Allan Gjerlevsen, Autonomous Quadcopter Control, Computer Engineering, Aalborg University, graduation July 2017
8. Mark Mose Johannsen. Scalar Speed Control of 3-phase induction motor. Energy Technology. Aalborg University, graduation July 2017
9. Kristian Brogaard Christensen. KapMon 2.0 Capacity Planning, Aalborg University, graduation January 25, 2017.
10. Alexandru Popa, Indoor Wireless Positioning and Monitoring System, Computer Engineering, Aalborg University, graduation January 25, 2017.
11. Danila Dragos-Cristian, ROS and Turtlebot Path Planning Integration, Computer Engineering, Aalborg University, graduation January 25, 2017.

Supervision at master degree level of semester projects in the master degree in Intelligent Reliable Systems IRS7

Supervision at master degree level of semester projects in the master degree in Intelligent Information Systems IIS7, IIS8, IIS9, IIS10 semesters

Supervision at master degree level of semester projects in the master degree in Software Development in CIS1, CIS2, CIS3 semesters

Supervision at undergraduate level of semester projects in the bachelor of Computer Engineering in ED3, ED4, ED6, semesters

**2. Study administration: A list of any study administration tasks, e.g. study board membership, head of studies or semester or course coordinator, accreditation, etc.**

1. Coordinator of the Master Degree in Intelligent Information Systems
2. Coordination of IIS1, IIS2 and IIS3 semesters in the master degree program on Intelligent Information Systems
3. Accreditation of the bachelor program in Computer Engineering
4. Writing the study plan of the master degree in Intelligent Information Systems

**3. University pedagogy qualifications: A list of any completed courses in university pedagogy, PBL courses, workshops, academic development projects, collegial guidance and supervision, etc.**

Completed the pedagogy course at Aalborg University Esbjerg

**4. Other qualifications: Conference attendance, editorials, presentations, etc. relating to education, 'University Teaching Day', etc.**

Seminars and Presentations

- 1.Seminar on Applications of Computational Intelligence. Research Center in Computer Science (Centro de Investigaciones en Computación-CIC) National Polytechnic Institute. June 22-24th, 2010 Mexico City, Mexico
- 2.An Optimized Soft Computing-based approach in Passage Retrieval for Question Answering Systems. Keynote. Research Center in Computer Science (Centro de Investigaciones en Computación-CIC) National Polytechnic Institute. June 25th, 2010 Mexico City, Mexico.
- 3.Mexican Computers from the Early 1980's Decade. Keynote. Computer Science Department CINVESTAV, Mexico DF, Mexico June 21, 2010.
- 4.Seminar on Advanced Computer Architecture. Computer Science Department CINVESTAV, Mexico DF, Mexico December 6-9th 2004.

Attendance to multiple international conferences in Europe, US, Canada and Mexico

Attendance to 'University Teaching Day 2017' Aalborg

**5. Teaching activity development and teaching materials: A list of any contributions to the development of new modules, teaching materials, study programmes, e-learning, collaboration with external business partners, etc.**

Writing the course notes for all the master degree and bachelor courses taught

Video lectures Spring 2020 for the courses

1. Real Time Systems and Programming Languages
2. Matrix Computation and Convex Optimization
3. Introduction to Probability and Statistics

**6. Teaching awards you may have received or been nominated for.**

Nomination as the best teacher in ED6 semester 2014 in Esbjerg

**7. Personal reflections and initiatives: Here you may state any personal deliberations as regards teaching and supervision, any wishes and plans for further pedagogic development, plans for following up on feedback/evaluations from students, etc.**

I have the necessary competences to teach more effectively a broad variety of subjects. I also think that technology could help me and other teachers to improve the learning process by providing variety and flexibility so that students could learn not only within the classroom but also anytime and at their own pace but still within the framework of a semester.

The main difficulties are in finding the best way to motivate and encourage students to become more active, participant and more conscious of their own learning process.

My focus will be in

- improving my teaching practices and methods
- improving my supervision techniques
- becoming more reflective and critic about my own teaching

Opportunities:

It is possible to become a better teacher, capable of knowing/acknowledging all my weaknesses and strengths so that I could improve in this regard all the time based on my own dynamic experiences

To transfer more efficiently to my students the knowledge I get through my research, in a way that students at undergraduate and graduate levels could understand, appreciate and participate

Challenges:

- To keep updated with the latest pedagogic techniques and technologies developed within my teaching areas
- To better encourage and motivate students in their learning process

Having a career as professor in any university is becoming more and more challenging. We are expected to be good as teachers, as researchers, as supervisors, as project managers.

To meet these expectations, we need to keep a good balance between teaching and research time.

In terms of evaluation of our work, research is however considered more important not only in Denmark but also in rest of the world. Teaching is not evaluated in the same way. This seems to be a contradiction.

However, in the end I think what is important is the final result of our academic work, in terms of our contributions to society in producing research at the highest quality level and in preparing the new generations of scientists and engineers that could work for the good of society.

## **8. Any other information or comments.**

Type your answer here...