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.

Note: SWS denotes confrontational hours of teaching per week during the semester (usually 15 weeks) and was the terminology used at German universities to specify the "size" of a course (before Bologna). All courses, which have this information have been done for the Department of Applied Informatics at Augsburg University, Germany. All other course have been held at Aalborg University, Denmmark. I have been active in several study programs both at bachelor and master level and both at Augsburg University and at Aalborg University.
- Aalborg University: Bachelor Medialogy, Bachelor Robotics, Bachelor Product and DesignPsychology, Master Medialogy
- Augsburg University: Bachelor Multimedia, Bachelor Media and Communication, MasterMultimedia, Master (Elite Graduate Program) Software Engineering

Lectures
1. Complex Software Systems (Bachelor Medialogy, UML/Algorithms) (5 ECTS), 2015-2016
2. Procedural Programming (Bachelor Medialogy/Bachelor Product and Design Psychology,C/C++) (5 ECTS), 2010-2016
3. Robotics Programming (Bachelor Robotics, C/C++/ROS) (5 ECTS), 2014-2016
4. Embodied Interaction (Master Medialogy, 5 ECTS), 2013-2016
5. Artificial Intelligence Programming (Bachelor Medialogy, 3 ECTS), 2010-2012, 2016
6. Software Agents and Playware (Master Medialogy, 5 ECTS), 2010-2012
7. Context-Aware Systems (Master (Elite Graduate Program) Software Engineering, 2 SWS),2007-2009
8. Human-Computer Interaction (Master (Elite Graduate Program) Software Engineering, 4SWS), 2006, 2008
9. Fundamentals of Multimedia (Bachelor Multimedia, 4 SWS), 2007-2008
10. User Interface Design (Master Multimedia 2 SWS), 2006
11. Affective Computing (Bachelor Multimedia, 4 SWS), 2005
12. Virtual Humans (Master Multimedia, 2 SWS), 2004
13. Multimodal Interaction (Bachelor Multimedia, 2 SWS), 2003

Research Seminars
1. Research in Medialogy (Master Medialogy, 5 ECTS), 2012-2016
2. Readings in Medialogy (Master Medialogy, 2 ECTS), 2010-2011
3. Virtual Worlds (Master Multimedia, 2 SWS), 2009
4. Interactive Multimedia Systems (Master Multimedia, 2 SWS), 2008
5. Multimedia Interfaces (Master Multimedia, 2 SWS), 2007
6. Imitation-Based Behavior Generation (Master Multimedia, 2 SWS), 2007
7. Multimodal Corpus Analysis (Bachelor Media and Communication, 2 SWS), 2004-2007
8. Context-Sensitive Systems (Master Multimedia, 2 SWS), 2006
9. Multimodal Mobile Interfaces (Master Multimedia, 2 SWS), 2006
10. Multicultural Man-Machine Interaction (Master Multimedia, 2 SWS), 2005
11. Affective User Interfaces (Master Multimedia, 2 SWS), 2003
12. Multimodal Interaction (Master Multimedia, 2 SWS), 2002

Practical Courses
1. Collaborative Serious Games (Bachelor Multimedia, 6 SWS), 2009
2. Ubiquitous Second Life Environment (Bachelor Multimedia, 6 SWS), 2008
3. Human-Computer Interaction (Bachelor Multimedia, 4 SWS), 2007
4. Wii-Based Interaction (Bachelor Multimedia, 6 SWS), 2007
5. Virtual Beergarden (Bachelor Multimedia, 6 SWS), 2006
6. Collaborative Multiplayer Games (Bachelor Multimedia, 6 SWS), 2006
7. Chatterbot for Kids (Bachelor Multimedia, 6 SWS), 2006
8. Location-Based Interaction (Bachelor Multimedia, 6 SWS), 2005
9. Affective Computing (Bachelor Multimedia, 4 SWS), 2005
10. Tangible Interaction Bachelor Multimedia, (6 SWS), 2004
11. Virtual Humans (Bachelor Multimedia, 6 SWS), 2004
12. Multimodal Interaction (Bachelor Multimedia, 6 SWS), 2003

Project Supervision

Master level
Note: Projects marked with * are master thesis projects. In all, I have supervised 29 students during their master thesis so far (23 in Aalborg, 6 in Augsburg).
1. *Participatory design of a social robot at a nursing home (External partner: Rødekorshjemmet Løgstær), 2015
2. Playful navigation inside the city (External partner: VisitAalborg), 2015

3. *Geometry learning across modalities (External partner: Skipper Clement InternationalSchool Aalborg), 2015
4. Gender attribution in computer games, 2015
5. *Age difference in interpretation of backchannels from a humanoid robot (External partner: SOSU Nord Futurelab, Liselund Activity Center), 2014
6. *Comparing Different Robot Embodiments in First Time Meeting Encounters (Externalpartner: SOSU Nord Futurelab), 2014
7. *Monsters Eat Art (External partner: Kunsten, Museum for Contemporary Art, Aalborg),2014
8. Case study on a Robotic Lamp for Memory Support (External Partner: RødekorshjemmetLøgstør), 2014
9. Participatory Design for Developing Assistive Technology Supporting Staff and Residentsin a Nursing Home (External Partner: Rødekorshjemmet Løgstør), 2014
10. *Apps for neurocognitive Rehabilitation (External partner: Brønderslev Neurocenter),2014
11. Experiential Astronomy Learning (External partner: Frejlev Skole), 2014
12. Mobile shape collector (External partner: Skipper Clement International School Aalborg),2014
13. GeometryCity - An Educational Location-Aware Math Game (External partner: SkipperClement International School Aalborg), 2014
14. User Involvement as a Factor of Robots Perceived Intelligence, 2014
15. Perceiving Emotion From the Movement of a Collection of Non-Humanoid Bodies, 2014
16. *Notification System for Context-Aware Applications, 2014
17. The Effect of Active vs. Inactive Error Correction Using Body Movements in a Non-Humanoid Companion Robot, 2013
18. Investigating the Potentials of Embodied Agents in Interactive Public Installations (External Partners: Friis Shopping Mall, Aalborg), 2013
19. Motivating User to Move Between Interactive Public Displays (External Partners: HjørringLibrary, Aalborg Library), 2013
20. *Virtual Savannah AI for the Simulation of an Ecosystem (External Partner: AalborgZoo), 2013
21. *Simulating Elephant Behavior (External Partner: Aalborg Zoo), 2013
22. Utilizing Proxemics for an Interactive Game (External Partner: Jumboland Aalborg), 2013
23. Controlling A Robot Using Physical Collaboration in Multiple Spaces, 2013
24. Influence of Head Nod Backchannel Signals by a Humanoid Agent, 2013
25. Developing an AR Game with Social Agents, 2012
26. The Robot in the Coffee Room - Investigating the Novelty Effect, 2012
27. FoodApp - A Smartphone App for Creating Awareness of Food Waste, 2012
28. Investigating Felder-Silverman Learning Style Dimensions in Mobile Language Learning,2012
29. *SHARP - Tele-rehabilitation tool for Speech Therapists, 2012
30. *Virtual Savannah 2.0 (External partners: Aalborg Zoo, Sofiendalskole), 2011
31. *Monsters at the Museum (External Partner: Kunsten, Museum for Contemporary Art,Aalborg), 2011
32. *The Little Painter (External Partner: Kunsten, Museum for Contemporary Art, Aalborg),2011
33. *Neighbor Wars - A Smartphone App for Museums (External Partner: Kunsten, Museumfor Contemporary Art, Aalborg), 2011
34. Modeling Danish Greeting Scenarios with EMMA, an Embodied Conversational Agent(External partners: CNRS/Paris Telecom, French Embassy), 2011
35. SHARP - Rehabilitation Tool for Speech Therapy for Aphasic Patients (External partner:Sygehus Vendsyssel, Hjørring), 2011
36. It's Bluffng - Implementing a Dice Game With a Social Robot, 2011
37. *Camera Toolset for the Unity Game Engine Supporting Design Professionals (Externalparner: Det Danske Akademi for Digital, Interaktiv Underholdning), 2011
38. *CAT: A tool for support and evaluation of children with social behavioral problems(External partner: Børnehuset Kernen), 2011
39. Prototyping Visual Knowledge Transfer: Developing a Prototype and In-Situ Evaluationin Rural Namibia (External Partners: Polytechnic of Namibia, Det Obelske Familiefond),2010
40. aMusement: Cross-Reality Social Games for Museums (External partner: Kunsten, Museum for Contemporary Art, Aalborg), 2010
41. Virtual Savannah: Interactive Infotainment System for Aalborg Zoo (External partner:Aalborg Zoo), 2010
42. Error Correcting Soft Keyboards Using Pattern Recognition, 2010
43. Virtual Golf Trainer: Interactive Multimodal Feedback Generation, 2010
44. ReActiMagic: Collaborative Mixed Reality Gaming Over a Distance, 2010

Before 2010 (Augsburg University):

45. *A plug and play tool for social group behavior for multiagent systems
46. *Gesturebased music generation
47. *Mobile intercultural training
48. *Combining IR tracking with three dimensional acceleration analysis for robust gesture recognition
49. *Trainable statistical natural language processing

Bachelor level

1. Sounds of the City (External partner: VisitAalborg, Aalborg Stadsarkiv), 2015
2. Mixed Reality Elephants (External partner: Aalborg Zoo), 2015
3. Detect And Avoid Behavior for UAVs, 2014
4. Spherometry - Pervasive Approach to Visual Computing, 2013

5. Christmas Elf (External partner: Hjørring Library), 2012
6. Fill the Figure (External partner: Jumboland Aalborg), 2012
7. Mirroring User Movements by a Robotic Ball, 2012
8. Intelligent Sphero - Path Planning for a Robotic Ball, 2012
9. Seaworld: Game Control by Head Tracking, 2010
Before 2010 (Augsburg University)
10. Website for retrieving multimodal corpus data
11. Modeling first meeting encounters in Second Life
12. Participatory design of a tangible live music application
13. Second Life as an evaluation platform for interactive multiagent systems
14. Implementing a gaze model for dyadic interactions with a virtual character
15. Investigating usability effects during the migration of two customer portals
16. Statistical music generation based on harmonics
17. Multimodal generation based on style parameters
18. Modeling and evaluating behavior-based features for MPEG-4 facial animation
19. Generating appropriate non-verbal behavior for polite ECAs
20. Parameterized generation of polite texts
21. Development of a test environment for physiological measurements
22. Emotional self reports with a virtual agent

PhD supervision
1. Birgit Endrass, University of Augsburg, Germany: Cultural Diversity for Virtual Characters, Co-supervisor: Prof. Dr. Elisabeth André, Doctoral Degree: 2012
2. Kasper Rodil, Aalborg University, Denmark: Co-Designing Digital Technologies forCultural Heritage Preservation with Indigenous Peoples in Namibia, Co-supervisor:Prof. Dr. Heike Winschiers-Theophilus
3. Co-supervisor (Mentor) for Christian Pallay, MCTS Technical University Munich,Germany: Revised Turing Test for Measuring Artificial Intelligence, Supervisor: Prof.Dr. Klaus Mainzer, Start: 2015

PhD assessment
1. Chair of assessment committee; PhD student: Søren Tranberg Hansen, DTI/AalborgUniversity, Denmark: Robot Games for Elderly { A Case Based Approach, Supervi-sor(s): Prof. Thomas Bak, Prof. Hans-Jørgen Andersen, PhD Awarded: 2011
2. Chair of assessment committee; PhD student: Jacob Madsen, Aalborg University,Denmark: User Experience in Augmented Reality for Cultural Heritage Preservation(tentative title), Supervisor: Assoc. Prof. Claus Madsen
3. Nick Degens, University ofWageningen, The Netherlands: To Boldly Go ...: Designingan Agent-Based Intercultural Training Tool, Supervisor(s): Prof. Adrie J. M. Beulens,Assoc. Prof. Dr. Gert-Jan Hofstede, PhD Awarded: 2014

Censoring duties (IT&Cognition)
Master theses at SDU and KU
Master course on Gesture and Language at KU
Bachelor course on Communication and Cognition at AU

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.

Coordinator for MED9 and 10 since 2010

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

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

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.

Teaching concept

In order to engage students in courses and seminars, I rely on two main pillars, a research-based approach to education on all levels (including bachelor) and a real-life component in the form of external partners whenever possible. This is

apparent from the list of project supervisions (see above) that most of the time include external partners. To qualify for a project with external partners, students have to go through a rigorous assessment of their proposals, which in the end have to incorporate both a research and an application component. To ensure a peer-based quality control, I established regular cross-semester research meetings with all groups supervised by me in a given semester (usually 5-8). Additionally, I started to promote the benefits of continuous engagement in a specific research topic, resulting in excellent results for the students accepting this chance of pursuing a topic over more than one semester. Examples include the Virtual Savannah collaboration with Aalborg Zoo or the Social Robotics collaboration with Løgstør Rødekorshjemmet. Both have been or are currently resulting in a number of joint publications.

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

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.

8. Any other information or comments.

Please send me an email (matthias AT create.aau.dk) if you actually have read this page.