Teaching portfolio

1. Teaching CV: A list of teaching and supervision tasks, including specification of academic fields, scope, level (bachelor, master, continuing education, PhD). Please state the teaching method used (e.g. lecture, class teaching, exercises, supervision, examination, coexamination, distance teaching, internet-based teaching and evaluation of teaching). Please also indicate the language of instruction.

Supervision of group projects: 20223studentsMAES 2.0: A ROS Compatible Simulation Tool for Multi Robot Exploration and CoverageSW10 (Distributed Systems) 20223studentsA Modeling Tool for System of SystemsSW10 (Distributed Systems) 20222 with Brian NielsenstudentsOffsetting Impermanent Loss Using Financial Derivatives in Smart ContractsSW10 (Distributed Systems) 20222 with Brian NielsenstudentsBlock Reorgs Mitigation in Ethereum Proof-of-StakeSW10 (Distributed Systems) 20222studentsDeveloping a Blockchain IoT SolutionBaIT-6T (Technologies) 20221studentsUsing the blockchain to manage reputation and in general fight fake newsSW9 (Distributed Systems) 20223studentsSimulating robot exploration algorithms in 3DSW9 (Distributed Systems) 20222 with Nicola CibinstudentsUsing smart contracts to support SBOM (software bill of materials) in development processesSW9 (Distributed Systems) 20222 with Daniele Dell' AgliostudentsComparing consensus mechanisms for blockchains in a smart gridSW9 (Distributed Systems) 20221 with Daniele Dell' AgliostudentsPolkadot-based blockchain to support energy communitiesSW9 (Distributed Systems) 20225studentsExperimental analysis of computation offloading using actionsSW7 (Internet Technologies) 20226studentsRobustness and scalability for computation offloadingSW7 (Internet Technologies) 20226studentsComparison of consensus mechanisms for the blockchain in the smart gridSW7 (Internet Technologies) 20214studentsConstraint-based Monitoring Framework for Distributed SystemsSW6 (B.Sc. Thesis) 20213studentsEXOGEM: Extending OpenAPI Generator for monitoring of RESTful APIsSW6 (B.Sc. Thesis) 20212studentsBLab - Bluetooth LabSW6 (B.Sc. Thesis) 20212studentsInvestigation of extensive downlink communcation in LoRaWANSW6 (B.Sc. Thesis) 20213studentscpp-tiny-clientSW6 (B.Sc. Thesis) 20214studentsOptiFit: Optimization of Sensor Utilization for Calisthenic Exercise Classification and Error DetectionSW6 (B.Sc. Thesis) 20213studentsComparison of Online Exploration and Coverage Algorithms in Continuous SpaceSW9 (Distributed Systems) 20213studentsMethodologies and Tools for System of Systems EngineeringSW9 (Distributed Systems) 20212 with Brian NielsenstudentsPlutus (A Glossary of Impermanent Loss Solutions)SW9 (Distributed Systems) 20212 with Brian NielsenstudentsBlockchains for Energy/Flexibility auctionsSW9 (Distributed Systems) 20206studentsRoutePlannerSW8 (Mobile Systems) 20201studentsRerouting via Waypoints in SUMODAT6 (B.Sc. thesis) 20201studentsMunin: A Trading Strategy Test SuiteDAT6 (B.Sc. thesis) 20203studentsStrategising RoboCup in Real Time with Uppaal StrategoDAT6 (B.Sc. thesis) 20204studentsMethod for Realistic Scenario Generation for SUMODAT6 (B.Sc. thesis) 20204studentsOffloading computation to mobile phonesSW7 (Internet Technologies) 20204studentsKarlog-IT monitorSW7 (Internet Technologies) 20206studentsExercise Session Assistant (ESA): A web-based tool to assist in physical exercise sessionsSW7 (Internet Technologies) 20205studentsModelling and code generation for an IoT system of systemsSW7 (Internet Technologies) 20196studentsMaking the Air Great AgainSW8 (Mobile systems) 20196studentsVirtual Reality ImmersionSW8 (Mobile systems) 20195studentsTactic -- Videogame tactics animationDAT4 (Language design) 20196studentsPivot -- The Language for Home AutomationDAT4 (Language design) 20195studentsGathering Data on Water Streams near AgricultureSW7 (Internet Technologies) 20196studentsAn IoT Data- and Device- Management Platform for Predictive MaintenanceSW7 (Internet Technologies) 20196studentsAn Online Marketplace for Sustainable CoffeeSW7 (Internet Technologies) Individual Bachelor thesis (not Denmark): 2019 Ricardo Jorge Cunha Alves: Water monitoring using Raspberry PI and webservices (Polytechnic Institute of Cavado & Ave, Portugal) 2018 Flávio Relvas: QoS in REST Arrowhead services (Polytechnic Institute of Porto, Portugal) 2018 Miguel Costa: House appliance energy management with IoT (Polytechnic Institute of Porto, Portugal) 2017 Rafael Teles Rocha: IoT systems for home automation (Polytechnic Institute of Porto, Portugal) 2016 Renato Ayres: Monitoring of QoS in service oriented applications (Polytechnic Institute of Porto, Portugal) 2016 Paulo Barbosa: Setting up QoS in service oriented applications (Polytechnic Institute of Porto, Portugal) 2016 Roberto Duarte: Implementation of fork-join paradigm on top of real-time Ethernet (Polytechnic Institute of Porto, Portugal) 2016 José Sousa: Publish subscribe communication in service oriented architectures (Polytechnic Institute of Porto, Portugal) 2016 Pedro Moura: High-performance data collection in industrial scenarios (Polytechnic Institute of Porto, Portugal) 2016 Joss Santos: Energy saving through virtual markets of energy, enabled by using service oriented architectures (Polytechnic Institute of Porto, Portugal) 2015 Fábio Oliveira: Simulation of real-time Ethernet (Polytechnic Institute of Porto, Portugal) 2015 Tiago Cerqueira: Vehicular communication and mobility models (Polytechnic Institute of Porto, Portugal) 2010 Jasmine del Vecchio: Design and implementation of LOGO for Miabot robots (University of Pisa, Italy) 2009 Davide Mascitti: Routing multi-attribute range queries on p2p networks (University of Pisa, Italy) 2009 Antonio Quartulli: Mobility and load adaptivity for p2p networks (University of Pisa, Italy) 2008 Luca Trovato: Simulation of MMORPG with Peersim (University of Pisa, Italy) 2008 Antonio Bruno: Additive Voronoi Diagrams for adaptive p2p networks (University of Pisa, Italy) Individual Master thesis (not Denmark): 2003 Marco Magnarosa: QoS for multicast transmission of multimedia data (University of Pisa, Italy) 2007 Martina Baldanzi: Range queries in p2p networks (University of Pisa, Italy) 2008 Claudio Vairo: SMEPP-Light: secure middleware for WSNs (University of Pisa, Italy) 2008 Salvo Ferraro: Protocol for density analysis in WSNs (University of Pisa, Italy) 2009 Luca Ferrucci: P2p networks based on multi-level Voronoi diagrams (University of Pisa, Italy) 2015 César Teixeira: Middleware for large-scale distributed systems (Polytechnic Institute of Porto, Portugal) Course teaching (Bachelor level): 2022, 2023 Programming of IoT Applications (Bachelor of IT) 2020, 2021, 2022, 2023 Internet and Web Programming (with Brian Nielsen) 2016, 2017, 2018 Computer Networks and Distributed Systems (Polytechnic Institute of

Cavado & Ave, Portugal) 2013 Computer Networking (Catholic University of Portugal, Portugal) 2009 Programming 2 (University of Pisa, Italy, with Marco Bellia) Course teaching (Master level): 2021, 2022 Specialization Course in Distributed Systems 2019, 2020, 2021, 2022 Distributed Systems 2017, 2018 Industrial data networking (Polytechnic Institute of Cavado & Ave, Portugal) Course teaching assistance (Bachelor level): 2021 Computer Architecture and Operating Systems 2019, 2020, 2021 Computer Architecture 2008 Operating System Languages Laboratory (University of Pisa, Italy) 2006 Introduction to Programming Laboratory (University of Pisa, Italy) 2005 Data Structure Laboratory (University of Pisa, Italy) 2005, 2006, 2008 Programming Fundamentals (Dept. of Mathematics, University of Pisa, Italy) 2002, 2003, 2004, 2005 Computing (University of Pisa, Italy) 2001, 2002, 2003, 2004 Concurrent Programming Laboratory (University of Pisa, Italy)

2. Study/programme administration and management: Experience in programme management and coordination. A list of study administration tasks, e.g. study board membership, chair of study board, semester or course coordinator, accreditation tasks, etc. Experience in planning teaching activities. Experience in programme development. Participating in committees and commissions etc. on education issues.

In 2008, I was the coordinator of the Science Communication of the Robotics Lab of the Pisa Science Fair. This involved acting as Science Communicator myself (giving presentations to teach computer science concepts such as algorithms, programming and sensors, to students with age 6-19), planning the material to be taught in the lab, teaching how to deliver presentations and classes to the staff of the Robotics Lab, mentoring them on how to interact with different types of students, and in general supporting the growth of my colleagues as educators. In Spring 2022, I was the semester coordinator for the 6th semester of the Bachelor in IT, Technology track (BaIT-6T).

3. Formal pedagogical training: A list of completed courses in university pedagogy, PBL courses, workshops, academic development projects, collegial guidance and supervision, etc. Written assessment from the course in university pedagogy for assistant professors. Participation in conferences on pedagogy and didactics. Please enclose any documentation of the above, such as course certificates, references, etc

In Spring 2019, I took a course on Problem Based Learning (4 seminars of 2 hours each), offered at the Department of Computer Science of Aalborg University. In the period January 2020 - December 2020, I attended and completed successfully the Adjunktpædagogikum course, which consists of 10 ECTS credits and is the official pedagogy education at Aalborg University.

4. Other qualifications: Conference contributions and attendance, contributions to debates, scientific articles on pedagogical issues etc. Peer supervision, editorials, mentoring experience or other types of competence development activities.

While working as Chief of a Robotics Lab, I have experimented with different teaching strategies to reach students ranging from 6 to 19 years old using robots built with LEGO, and the work led to a paper [1] and to a Bachelor Thesis (Jasmine del Vecchio, B.Sc. Computer Science, thesis on "Design and implementation of LOGO for Miabot robots", graduated on 04/06/10). J. Del Vecchio, M. Albano, M. Righi, M. R. Laganà, and M. M. Massai, "Piccoli robot per riflettere insieme giocando," in Proceedings of the Convegno AICA sull' Informatica per la Didattica (DIDAMATICA 2009), (Trento, Italy), pp. 1–6, 2009.

5. Pedagogical development and research: Development of new courses, teaching materials, teaching methods, examination types or other types of pedagogical development. Didactic and pedagogical research. Cooperation with external collaboration partners.

As part of my pedagogy education at Aalborg University, I investigated into "hybrid lectures". While working at the Department of Technology of Polytechnic Institute of Cavado e Ave, I created the new module "Industrial Data Networking". In 2020, together with Brian Nielsen, I created the new module Internet Networking and Web Programming (IWP) for the 2nd semester at Aalborg University, and I renewed it one year later (2021) taking into account students' feedback. In Spring 2022, together with Dr. Junior Dongo, I created the new module Programming of Internet of Things Applications (PIA) for the 6th semester of the Bachelor in IT, Technology track (BaIT-6T) at Aalborg University.

6. References on your teaching skills from superiors or colleagues. Teaching evaluations and any teaching awards received.

Type your answer here...

7. Personal reflections and initiatives: Here you may state any personal deliberations as regards teaching and supervision, any wishes and plans for further pedagogical development, plans for following up on student feedback/evaluations, etc. Personal reflections on your own pedagogical practice, including objectives, methods and implementation. This should include an analysis and a reasoned description of your pedagogical activities in relation to your pedagogical understanding and student learning. Thoughts on the teaching method at Aalborg University (which is largely based on group-organised project work and problem-based learning)

Type your answer here...

8. Any other information or comments.

Type your answer here...