

Overview of AI-related PhD courses in Norway relevant for NORA's research school - UiA

Course	ECTS	Department/Institute	Link	Short Description	Last taught	Course leader	Email
IKT623 Principles of Artificial Intelligence	5	Faculty of Engineering and Science	<a href="https://www.uia.no/en/studieplaner/topic/IKT623-G">uia.no/en/studieplaner/topic/IKT623-G</a>	The course will provide insight into the theory, foundations, implementation and applications of Artificial Intelligence (AI). It will bestow the students with the ability to use AI-methodologies in any application domain.	2020 Autumn	Ole-Christoffer Granmo	ole.granmo@uia.no
IKT724: Deep Learning	5	Faculty of Engineering and Science	<a href="https://www.uia.no/en/studieplaner/topic/IKT724-G">https://www.uia.no/en/studieplaner/topic/IKT724-G</a>	This course offers an in-depth study on the mathematical and algorithmic foundations of deep neural networks (DNNs).	2020 Autumn	Baltasar Enrique Beferull Lozano	baltasar.beferull@uia.no
IKT710 Learning in Random Environments	5	Faculty of Engineering and Science	<a href="https://www.uia.no/studieplaner/topic/IKT710-G">https://www.uia.no/studieplaner/topic/IKT710-G</a>	The heart of the course will involve deterministic and stochastic learning automata with fixed and variable structures. We will study their operation in random environments and the various norms of learning. The learning algorithms studied will be the linear and non-linear learning schemes of the continuous and discretised families with ergodic and non-ergodic properties. Estimator algorithms will also be examined.	2020 Autumn	Ole-Christoffer Granmo	ole.granmo@uia.no
IKT711 Principles of Pattern Recognition	5	Faculty of Engineering and Science	<a href="https://www.uia.no/studieplaner/topic/IKT711-G">https://www.uia.no/studieplaner/topic/IKT711-G</a>	This course will introduce students to the principles of statistical and syntactic pattern recognition. After a brief review of the principles of probability, random variables and vectors, we will study Bayes decision theory and criteria for classification. We will then consider the theory of maximum likelihood and Bayesian learning for parametric pattern recognition.	2020 Autumn	Ole-Christoffer Granmo	ole.granmo@uia.no
IKT719 Advanced Optimization	5	Faculty of Engineering and Science	<a href="https://www.uia.no/studieplaner/topic/IKT719-G">https://www.uia.no/studieplaner/topic/IKT719-G</a>	The theory and algorithms will be interlaced with several applications in different disciplines: selected applications in areas such as signal processing, data analytics, big data, machine learning, control, circuit design, wireless communication & sensor networks, distributed processing on graphs.	2020 Autumn	Baltasar Enrique Beferull Lozano	baltasar.beferull@uia.no
IKT720 Optimization	5	Faculty of Engineering and Science	<a href="https://www.uia.no/en/studieplaner/topic/IKT720-G">https://www.uia.no/en/studieplaner/topic/IKT720-G</a>	The various optimization techniques will be continuously illustrated to solve important engineering problems in different areas, such as approximation and fitting, statistical signal processing, classification, problems on graphs and communication networks, control, computational geometry, data analytics, machine learning, task scheduling and portfolio optimization.	2020 Autumn	Baltasar Enrique Beferull Lozano	baltasar.beferull@uia.no
IKT722: Introduction to mmWave Sensing	5	Faculty of Engineering and Science	<a href="https://www.uia.no/en/studieplaner/topic/IKT722-G">https://www.uia.no/en/studieplaner/topic/IKT722-G</a>	The goal of this course is to give the students a basic knowledge on mmWave Sensors (FMCW Radars) which are important parts of contemporary electronics (for example: design and development of advanced driver assistance systems (ADAS)).	2020 Autumn	Linga Reddy Cenkeramaddi	linga.cenkeramaddi@uia.no
IKT723: Wireless Prototyping using SDRs (Software Defined Radios)	5	Faculty of Engineering and Science	<a href="https://www.uia.no/en/studieplaner/topic/IKT723-G">https://www.uia.no/en/studieplaner/topic/IKT723-G</a>	Students begin with building a VI, data transfer and communication. Advanced topics like programming in Parallel, FPGA Programming with LabVIEW, Multirate diagrams and FPGA will be introduced after covering basics. Using optimized FPGA VIs, designing with Clock-Driven logic and implementation of machine learning algorithms will also be covered in this course.	2020 Autumn	Linga Reddy Cenkeramaddi	linga.cenkeramaddi@uia.no
MAS601 Design, Modelling and Simulation of Mechatronic Systems	5	Faculty of Engineering and Science	<a href="https://www.uia.no/studieplaner/topic/MAS601-G">https://www.uia.no/studieplaner/topic/MAS601-G</a>	The learning outcome of the modelling and simulation part of the course is an overview of the state-of-the-art within modelling of mechatronic systems. The successful candidate will know the governing equations for steady-state and dynamic modelling of the basic electronic, electrical, hydraulic, pneumatic and mechanical sub-systems of a mechatronic system.	2020 Autumn	Michael Rygaard Hansen	michael.r.hansen@uia.no
MAS602 Advanced Control and Robotics	5	Faculty of Engineering and Science	<a href="https://www.uia.no/studieplaner/topic/MAS602-G">https://www.uia.no/studieplaner/topic/MAS602-G</a>	The learning outcome of the course is insight into current research topics within advanced control systems and robotics. The successful candidate will have knowledge of the state-of-the-art within a number of topics related to analysis and design of multivariable and nonlinear systems.	2020 Autumn	Michael Ruderman	michael.ruderman@uia.no
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