SMARTER
Professional education in Artificial Intelligence (AI)
VIRTUAL REALITY IN INDUSTRIAL APPLICATIONS
Speed up training for factory workers with Mixed Reality or teleoperate complex equipment with Virtual Reality. The uses for VR in industry are infinite. This course will teach you how to apply VR.

DISTRIBUTED ARTIFICIAL INTELLIGENCE AND MULTI-AGENT SYSTEMS
How to manage heterogeneous, autonomous entities in a way that there is a coordinated, fair and/or resilient overall result? In this course, we teach approaches and architectures for achieving this using Distributed Artificial Intelligence.

INTRODUCTION TO ARTIFICIAL INTELLIGENCE
AI is more than just machine learning. This course will give you a broad overview of AI methods like search, constraint satisfaction and automated planning. So even if you don’t have access to the data necessary for machine learning, there is still a lot that AI can do.

REINFORCEMENT LEARNING PART 1 & 2
Reinforcement Learning allows to solve complex decision-making problems by learning from trial and error.

This AI method is used in such applications as resource management, robot control and personalised recommendation systems. This two-part course will teach you how to choose the right Reinforcement Learning algorithm by analysing the problem to be solved.

MACHINE LEARNING PART 1 & 2
Machine Learning is a very hot topic since it is the foundation for technological advancements such as self-driving cars, customer behaviour prediction and automated analyses of CT scans. Basically there is a chance to use Machine Learning wherever you collect data. In this two-part course, we will show you how.

AI – BASED SEARCH METHODS
Autonomous robots are key to realizing automated solutions that are general and re-usable across industries and applications.

In this course, we study key AI Search Methods underlying this flexibility, namely, planning, scheduling and coordination.

DECLARATIVE PROBLEM SOLVING WITH ANSWER SET PROGRAMMING
When solving difficult searching problems, like scheduling, planning and configuration tasks, Answer Set Programming is an invaluable AI method. Due to the declarative aspect of ASP we can model the problem statements instead of the problem solution and thereby approach the problem from a different perspective.

AUTONOMOUS ROBOTS AND ROS
By using ROS, Robot Operating System, you can embed intelligence in a robot that from the start had none. ROS is often used by R&D teams to develop prototypes quickly. And as a bonus, by mastering ROS, you also get quick access to the latest research results that you can incorporate into your future products.

EXPLAINABLE ARTIFICIAL INTELLIGENCE
When using AI, we get automated suggestions and recommendations, but sometimes we don’t really know how and why the AI-system came to its conclusion. In this course, we give you an overview of Explainable AI methods to make models and AI-systems more transparent and increase the interaction and trust between human and machine.

INTRODUCTION TO HUMAN-ROBOT INTERACTION
As robots enter our society, it is becoming evident that humans and robots must learn how to cooperate and interact. To accomplish this, we must understand both the technological and human perspective. In this course we introduce you to the field of Human-Robot Interaction.
ENTRY REQUIREMENTS: At least 180 credits including 15 credits programming as well as qualifications corresponding to the course “English 5"/“English A” from the Swedish Upper Secondary School.

WORK EXPERIENCE AND VALIDATION: If you for example, do not meet the formal requirement of 15 credits of programming but have many years of work experience in the field. You need to fill in and upload THIS document together with a certificate to antagning.se. Your certificate must describe your knowledge and amount of work experience in relation to the entry requirements. Lastly, your certificate needs to be signed by your employer.

COURSE FORMAT: Smarter courses are distance courses with three mandatory meetings (remote participation allowed). 3 credits per course which corresponds to 80 hours of study conducted during a 10–15 week period.