Artificial Intelligence

Course Description

The quest for artificial intelligence has captured humanity's interest for many decades and has been an active research area since the 1960s. This course will give a detailed overview of the historical developments, successes, and set-backs in AI, as well as the development and use of expert systems in early AI systems.In order to understand cognitive processes, the course will give a brief overview of the biological brain and (human) cognitive processes and then focus on the development of modern AI systems fueled by recent developments in hard- and software. Particular focus will be given to discussion of the development of “narrow AI” systems for specific use cases vs. the creation of general artificial intelligence.The course will give an overview of a wide range of potential application areas in artificial intelligence, including industry sectors such as autonomous driving and mobility, medicine, finance, retail, and manufacturing.

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   1. Historical Developments
   2. AI Winter
   3. Notable Advances in AI
2. Expert Systems
   1. Overview Over Expert Systems
   2. Introduction to Prolog
3. Neuroscience
   1. The (Human) Brain
   2. Cognitive Processes
4. Modern AI Systems
   1. Recent Developments in Hard- and Software
   2. Narrow vs General AI
   3. NLP and Computer Vision
5. AI Application Areas
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   2. Personalized Medicine
   3. FinTech
   4. Retail & Industry