

Artificial Intelligence (AI) Human Intelligence Exhibited by Machines

- Intelligence exhibited by machines
- Broadly defined to include any simulation of human intelligence
- Expanding and branching areas of research, development, and investment
- Includes robotics, rule-based reasoning, natural language processing (NLP), knowledge representation techniques (knowledge graphs) ...

Machine Learning (ML) An Approach to Achieve Artificial Intelligence

- Subfield of AI that aims to teach computers the ability to do tasks with data, without explicit programming
- Uses numerical and statistical approaches, including artificial neural networks to encode learning in models
- Models built using “training” computation runs or through usage

Deep Learning (DL) A Technique for Implementing Machine Learning

- Subfield of ML that uses specialized techniques involving multi-layer (2+) artificial neural networks

- Layering allows cascaded learning and abstraction levels (e.g. line -> shape -> object -> scene)
- Computationally intensive enabled by clouds, GPUs, and specialized HW such as FPGAs, TPUs, etc.