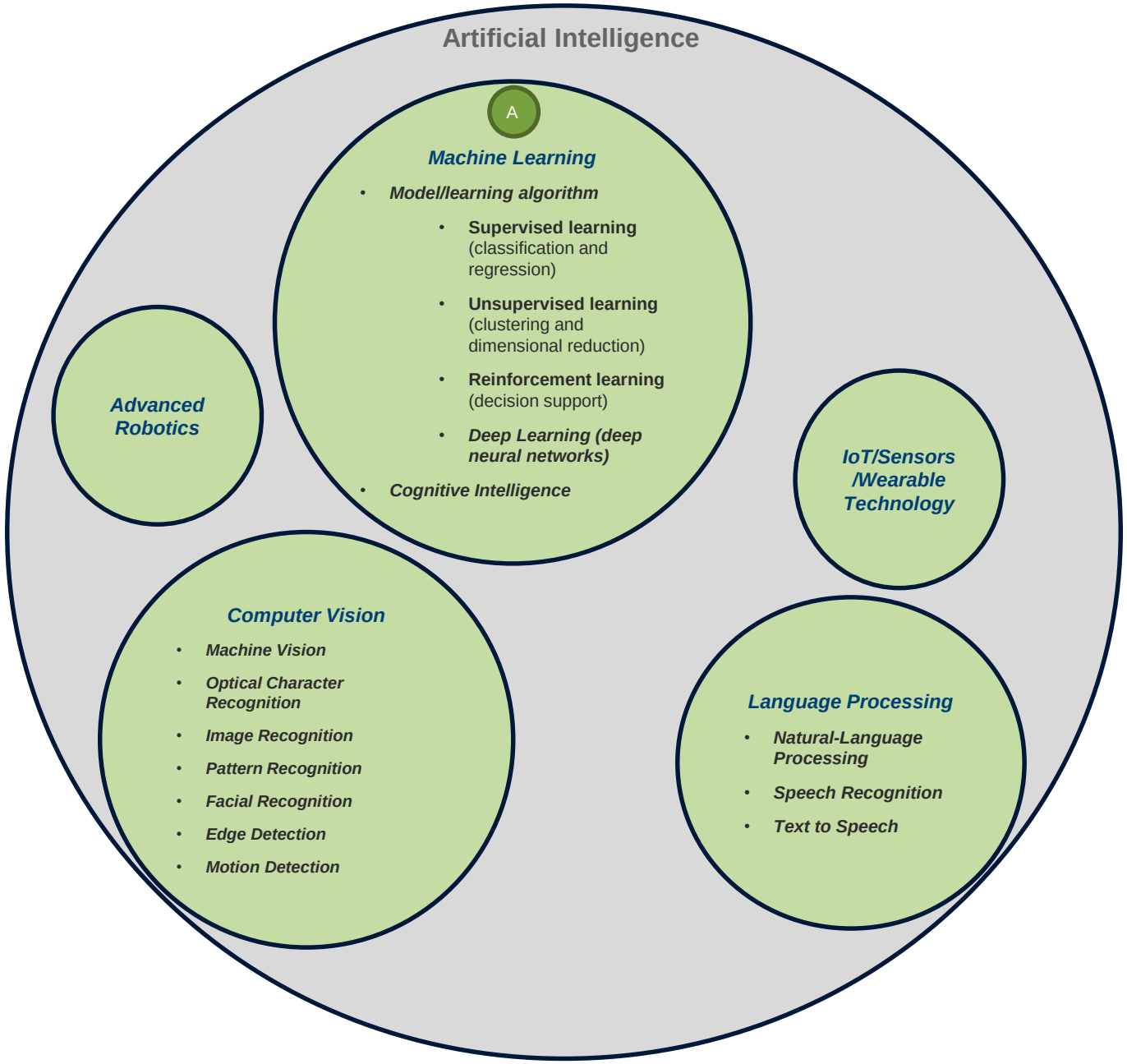
# Machine Learning the What

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Machine learning is a branch of artificial intelligence where you can train computing systems to learn from data. Machine learning is the use of algorithms to enable computers to continuously learn from patterns in data without being explicitly programmed to do so.

- ***Model/learning algorithm***
  - Models are built or trained using ***supervised learning*** (classification and regression). e.g. Logistic Regression, Naive Bayes, Support Vector Machine (SVM)
  - Models are built or trained using ***unsupervised learning*** (clustering and dimensional reduction). *e.g. K-means, Principal component analysis (PCA)*
  - Models are built or trained using ***reinforcement learning*** (decision support). *e.g. Decision Tree, Random Forest*
  - ***Deep Learning (deep neural networks):*** Deep learning expands standard machine learning by allowing intermediate representations to be discovered. The most common class of deep learning is the feedforward deep neural network (DNN), which uses numerous layers of interconnected processing units to "discover" appropriate intermediate presentations from raw input data. These optimizations have only become feasible today on such a broad scale because of the recent breakthrough in high-performing graphics processing unit (GPU) architectures. e.g. Neural networks
- **Cognitive Intelligence**: Cognitive intelligence software locates patterns in large sets of data. Complex algorithms take into account factors such as context, timing, and history to create insights. This includes robo-advisors in financial services and many AI applications.