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| --- | --- | --- | --- |
| Category | Category  Length | Description | Example Applications |
| Machine Learning | 16.00 | Developing algorithms that allow computers to learn from data and improve predictions. | Spam detection, recommendation systems, predictive analytics |
| Deep Learning | 13.00 | Using deep neural networks to model complex patterns in data. | Autonomous vehicles, speech recognition, medical diagnostics |
| Natural Language Processing | 27.00 | Enabling machines to understand, interpret, and generate human language. | Chatbots, machine translation, sentiment analysis |
| Computer Vision | 15.00 | Teaching machines to interpret and analyze visual data from images and videos. | Facial recognition, medical imaging, surveillance systems |
| Reinforcement Learning | 22.00 | Training AI agents to learn optimal decision-making through trial and error. | Game AI, robotics, autonomous control systems |

**Table 1: Overview of AI Categories and Applications**

This table provides a summary of key AI fields, including Machine Learning, Deep Learning, Natural Language Processing (NLP), Computer Vision, and Reinforcement Learning. Each category is described with its core functionality and accompanied by real-world applications. The table highlights how different AI techniques are applied in domains such as automation, healthcare, natural language understanding, image processing, and decision-making systems. Added a column Category Length, which represents the number of characters in the category name.