**Artificial Intelligence Concept – 2025**

**Types of ML Algorithms**

1. **Supervised Learning**: These algorithms learn from labeled data to predict outcomes. Examples include decision trees, support vector machines (SVM), and random forests[**1**](https://www.bing.com/ck/a?!&&p=964f99c856713f47c7026858416cd6abcc8c7c4eaf02c4f81c27049fde91247aJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuZ2Vla3Nmb3JnZWVrcy5vcmcvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1zLw&ntb=1)[**2**](https://www.bing.com/ck/a?!&&p=688ffccb43a8d2a2997bcf517e4bce19f771913a23632df36b0ef7171ad86357JmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuaWJtLmNvbS90aGluay90b3BpY3MvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1z&ntb=1).
2. **Unsupervised Learning**: These algorithms work with unlabeled data to uncover patterns. Examples include k-means clustering and Gaussian mixture models[**1**](https://www.bing.com/ck/a?!&&p=964f99c856713f47c7026858416cd6abcc8c7c4eaf02c4f81c27049fde91247aJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuZ2Vla3Nmb3JnZWVrcy5vcmcvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1zLw&ntb=1)[**3**](https://www.bing.com/ck/a?!&&p=e2581d15025aab91799e9bc75a5280b02771f7fc6e7b0a0a4a44ef3fbd90c02cJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuc3RhdG9sb2d5Lm9yZy9pbnRyb2R1Y3Rpb24tdG8tbWFjaGluZS1sZWFybmluZy1rZXktY29uY2VwdHMtYW5kLWFsZ29yaXRobXMtZXhwbGFpbmVkLw&ntb=1).
3. **Reinforcement Learning**: These algorithms learn by interacting with an environment and receiving feedback in the form of rewards or penalties. Examples include Q-learning and actor-critic methods[**1**](https://www.bing.com/ck/a?!&&p=964f99c856713f47c7026858416cd6abcc8c7c4eaf02c4f81c27049fde91247aJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuZ2Vla3Nmb3JnZWVrcy5vcmcvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1zLw&ntb=1)[**2**](https://www.bing.com/ck/a?!&&p=688ffccb43a8d2a2997bcf517e4bce19f771913a23632df36b0ef7171ad86357JmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuaWJtLmNvbS90aGluay90b3BpY3MvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1z&ntb=1).
4. **Deep Learning**: A subset of ML that uses neural networks with multiple layers to process complex data like images and text. Deep learning models are particularly effective for tasks like facial recognition and speech processing[**2**](https://www.bing.com/ck/a?!&&p=688ffccb43a8d2a2997bcf517e4bce19f771913a23632df36b0ef7171ad86357JmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuaWJtLmNvbS90aGluay90b3BpY3MvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1z&ntb=1)[**3**](https://www.bing.com/ck/a?!&&p=e2581d15025aab91799e9bc75a5280b02771f7fc6e7b0a0a4a44ef3fbd90c02cJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuc3RhdG9sb2d5Lm9yZy9pbnRyb2R1Y3Rpb24tdG8tbWFjaGluZS1sZWFybmluZy1rZXktY29uY2VwdHMtYW5kLWFsZ29yaXRobXMtZXhwbGFpbmVkLw&ntb=1).

**Practical Applications**

ML algorithms are widely used in various domains, including:

* **Healthcare**: AI-assisted diagnosis and personalized treatment recommendations.
* **Retail**: Personalized product recommendations and demand forecasting.
* **Finance**: Fraud detection and credit risk assessment.
* **Transportation**: Autonomous vehicles and route optimization[**1**](https://www.bing.com/ck/a?!&&p=964f99c856713f47c7026858416cd6abcc8c7c4eaf02c4f81c27049fde91247aJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuZ2Vla3Nmb3JnZWVrcy5vcmcvbWFjaGluZS1sZWFybmluZy1hbGdvcml0aG1zLw&ntb=1)[**3**](https://www.bing.com/ck/a?!&&p=e2581d15025aab91799e9bc75a5280b02771f7fc6e7b0a0a4a44ef3fbd90c02cJmltdHM9MTc1MTA2ODgwMA&ptn=3&ver=2&hsh=4&fclid=13991d38-82a7-6217-2367-0b21831563a3&u=a1aHR0cHM6Ly93d3cuc3RhdG9sb2d5Lm9yZy9pbnRyb2R1Y3Rpb24tdG8tbWFjaGluZS1sZWFybmluZy1rZXktY29uY2VwdHMtYW5kLWFsZ29yaXRobXMtZXhwbGFpbmVkLw&ntb=1).

Machine learning algorithms are essential for leveraging data to drive innovation, improve decision-making, and solve complex problems efficiently. They continue to evolve, enabling more advanced and precise applications across industries.

Link: <https://www.geeksforgeeks.org/machine-learning/machine-learning-algorithms/>

<https://www.mygreatlearning.com/blog/machine-learning-algorithms/>

<https://www.freecodecamp.org/news/machine-learning-handbook/>