Machine Learning

Discussing through available diagrams

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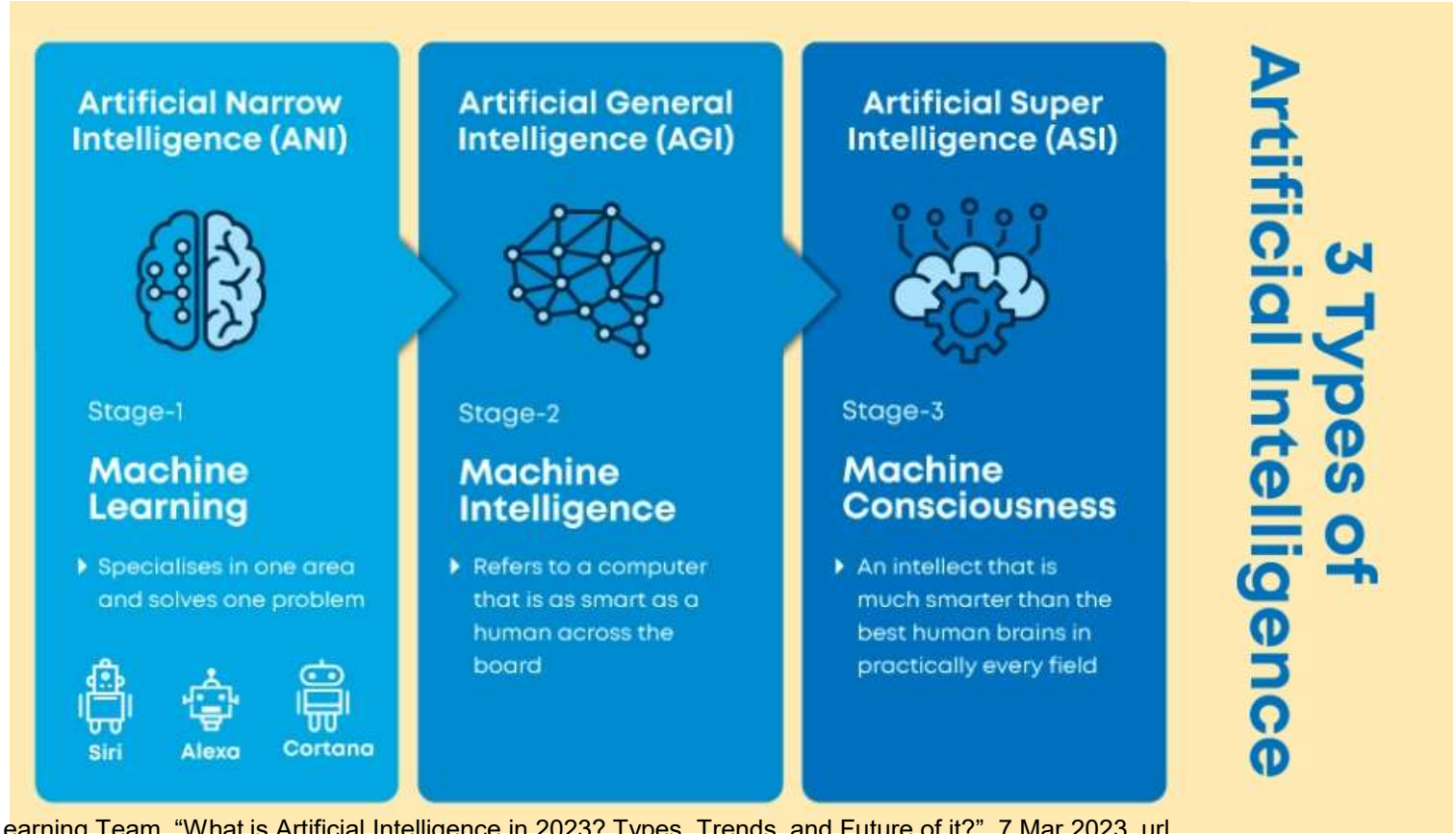
Outline

Artificial Intelligence

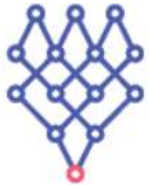


Great Learning Team, “What is Artificial Intelligence in 2023? Types, Trends, and Future of it?”, 7 Mar 2023, url https://www.mygreatlearning.com/blog/what-is-artificial-intelligence/ [20230411].

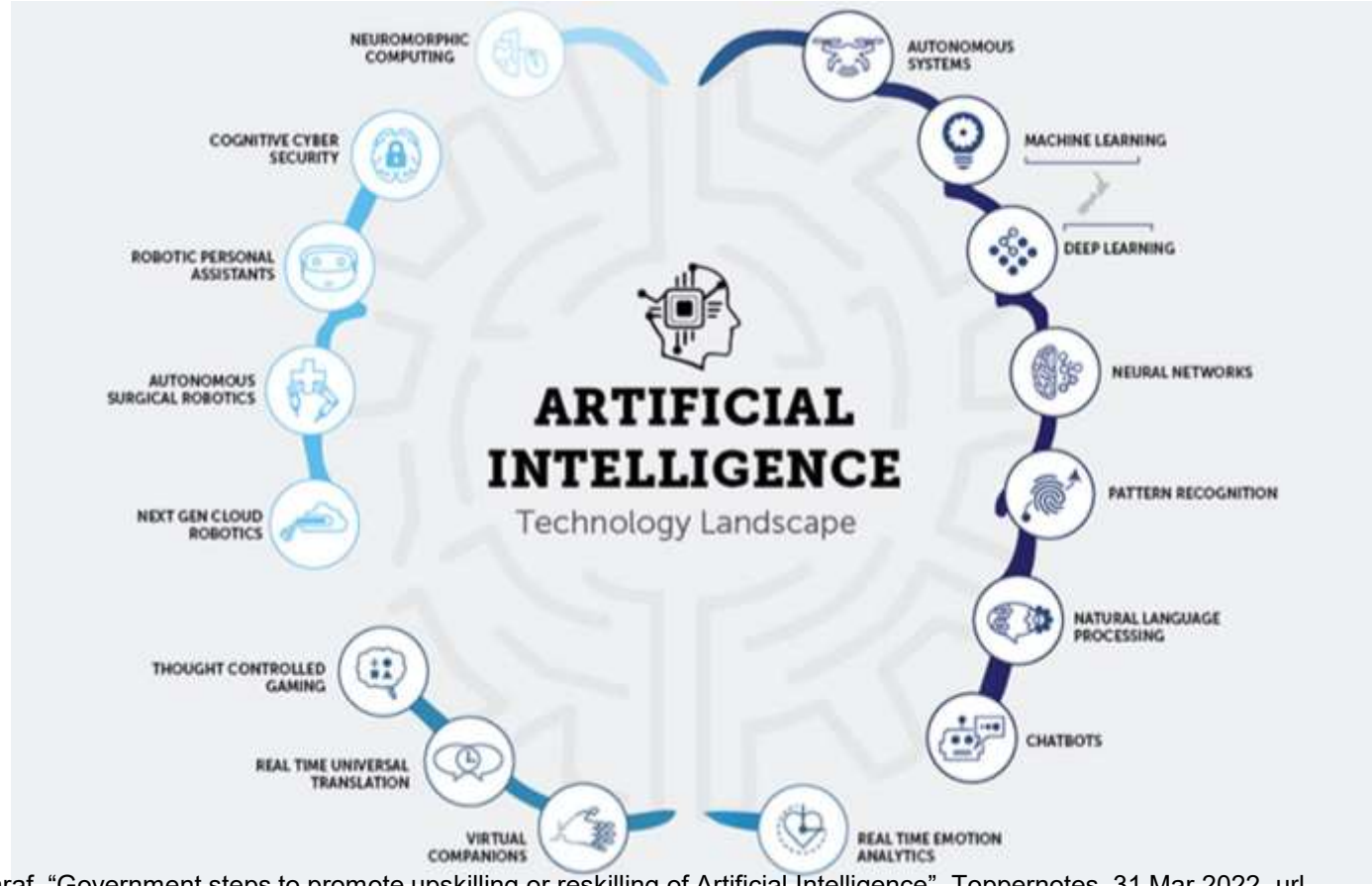
Types of AI

Reactive AI	Limited memory	Theory of mind	Self-aware
Good for simple classification and pattern recognition tasks	Can handle complex classification tasks	Able to understand human motives and reasoning. Can deliver personal experience to everyone based on their motives and needs.	Human-level intelligence that can bypass our intelligence, too
Great for scenarios where all parameters are known; can beat humans because it can make calculations much faster	Able to use historical data to make predictions	Able to learn with fewer examples because it understands motive and intent	
Incapable of dealing with scenarios including imperfect information or requiring historical understanding	Capable of complex tasks such as self-driving cars, but still vulnerable to outliers or adversarial examples	Considered the next milestone for AI's evolution	
	This is the current state of AI, and some say we have hit a wall		



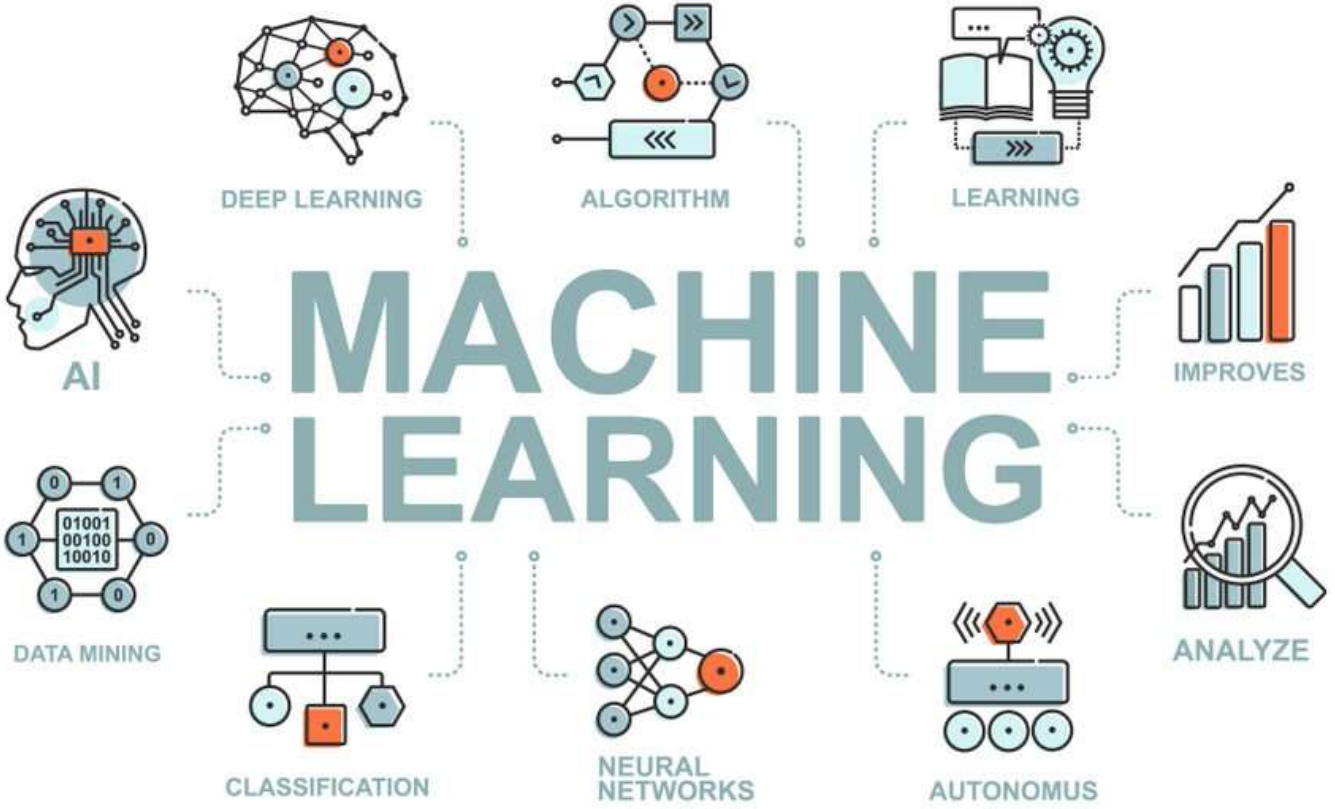



-, "4 Types of Artificial Intelligence", Huawei, 20 Jun 2022, url https://forum.huawei.com/enterprise/en/4-types-of-artificial-intelligence/thread/891503-891 [20230411].

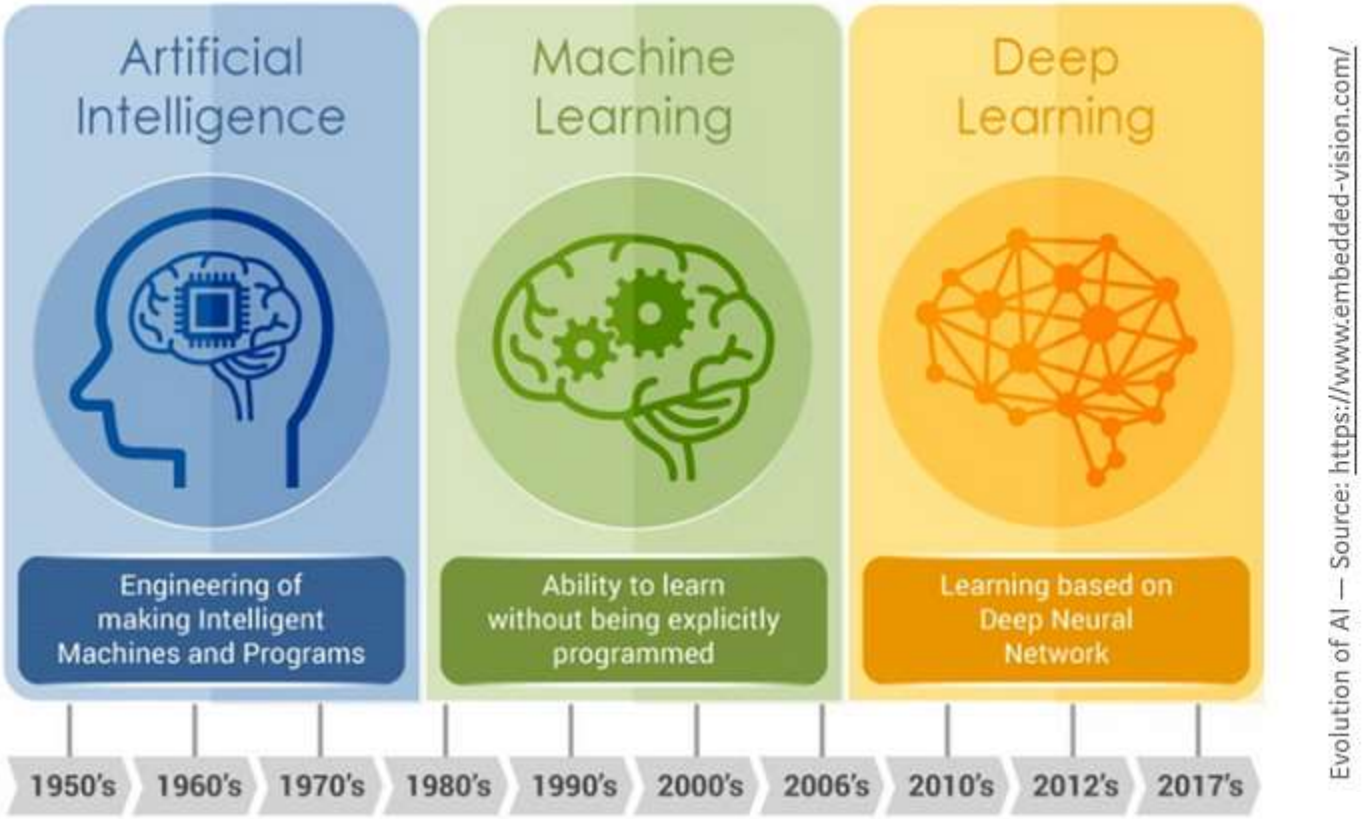


Abhishek Saraf, “Government steps to promote upskilling or reskilling of Artificial Intelligence”, Toppernotes, 31 Mar 2022, url https://web.toppersnotes.com/current-affairs/blog/government-steps-to-promote-upskilling-or-reskilling-of-artificial-intelligence-Bog9 [20230411].

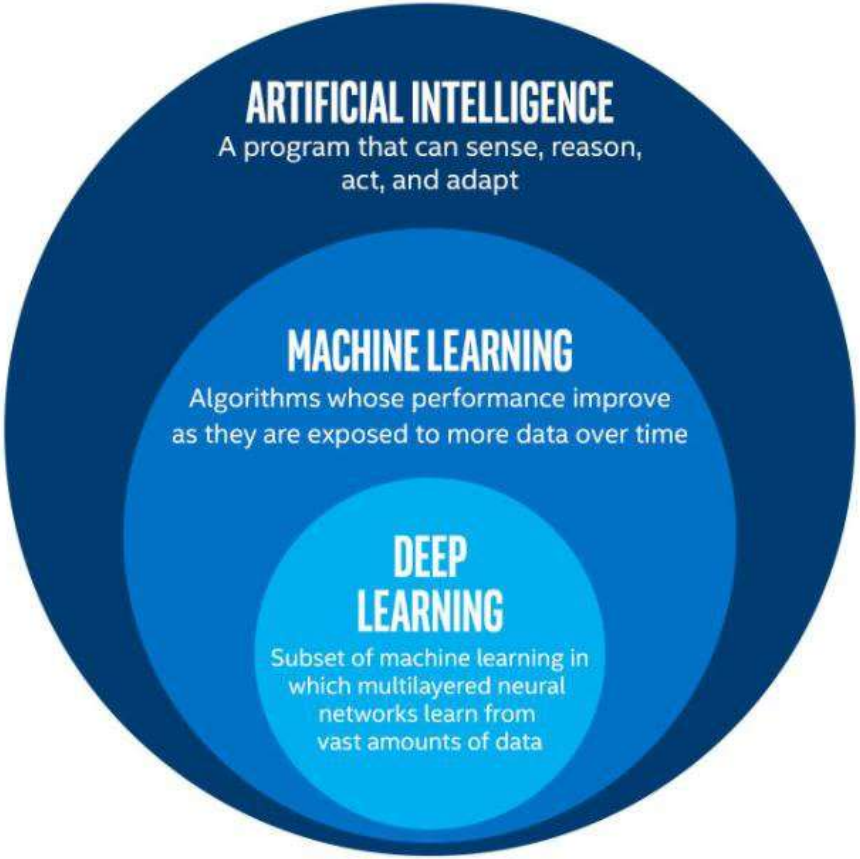
Machine Learning



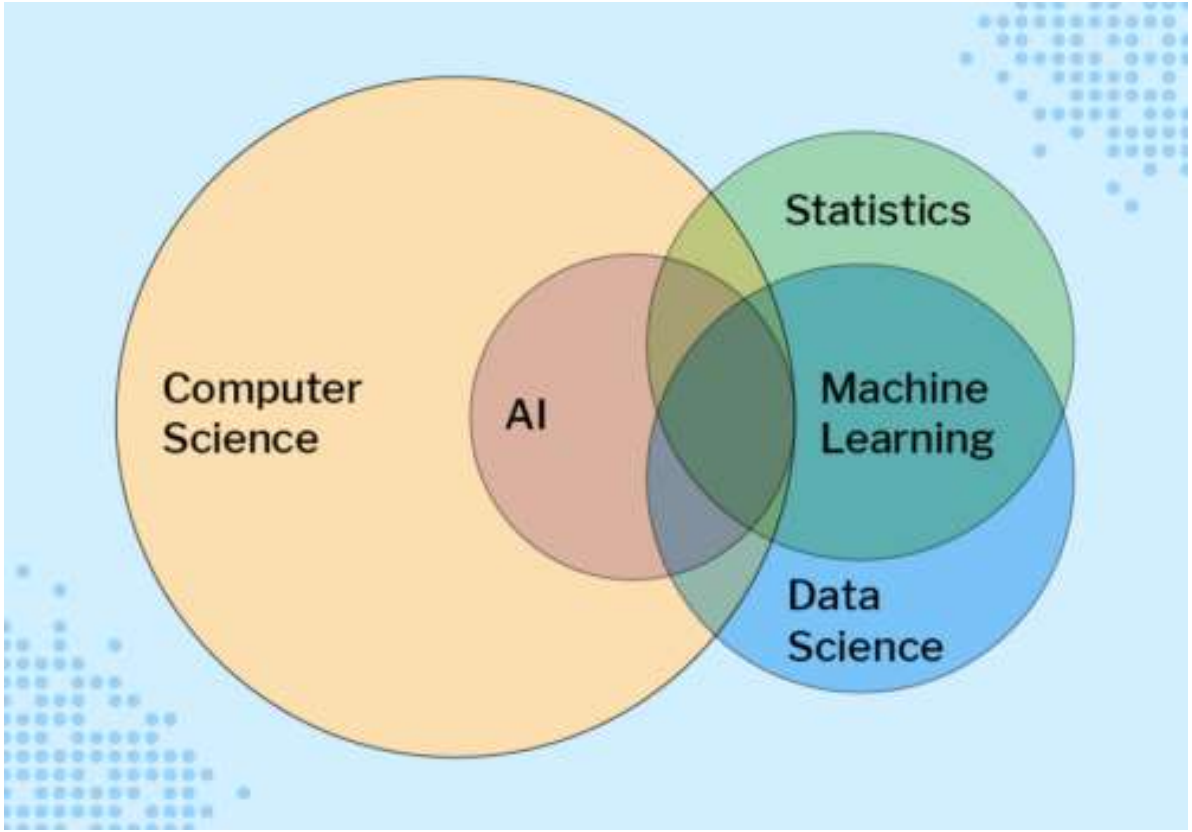
CCR, “An Introduction to Machine Learning, Its Importance, Types, and Applications”, FORE School of Management, New Delhi, 31 Aug 2022, url https://www.fsm.ac.in/blog/an-introduction-to-machine-learning-its-importance-types-and-applications/ [20230410].



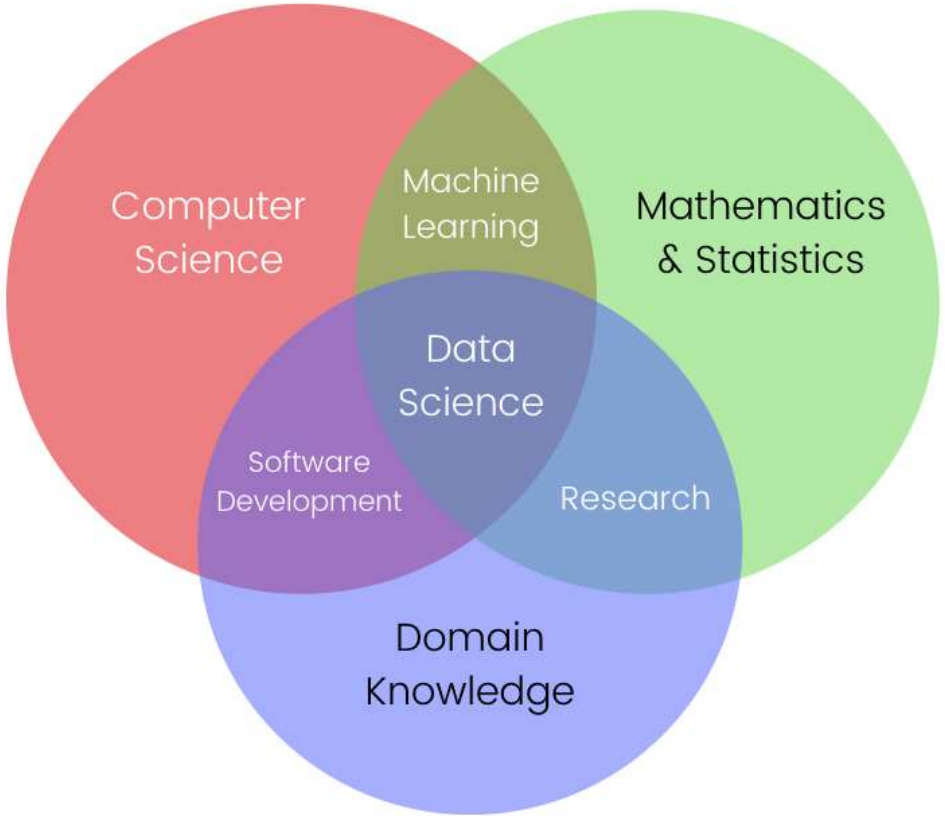
Vikita Padaliya, “Difference between AI, ML and DL”, Medium, 25 Sep 2019, url https://medium.com/decoding-artificial-intelligence/p-f5274d8db2 [20230411].



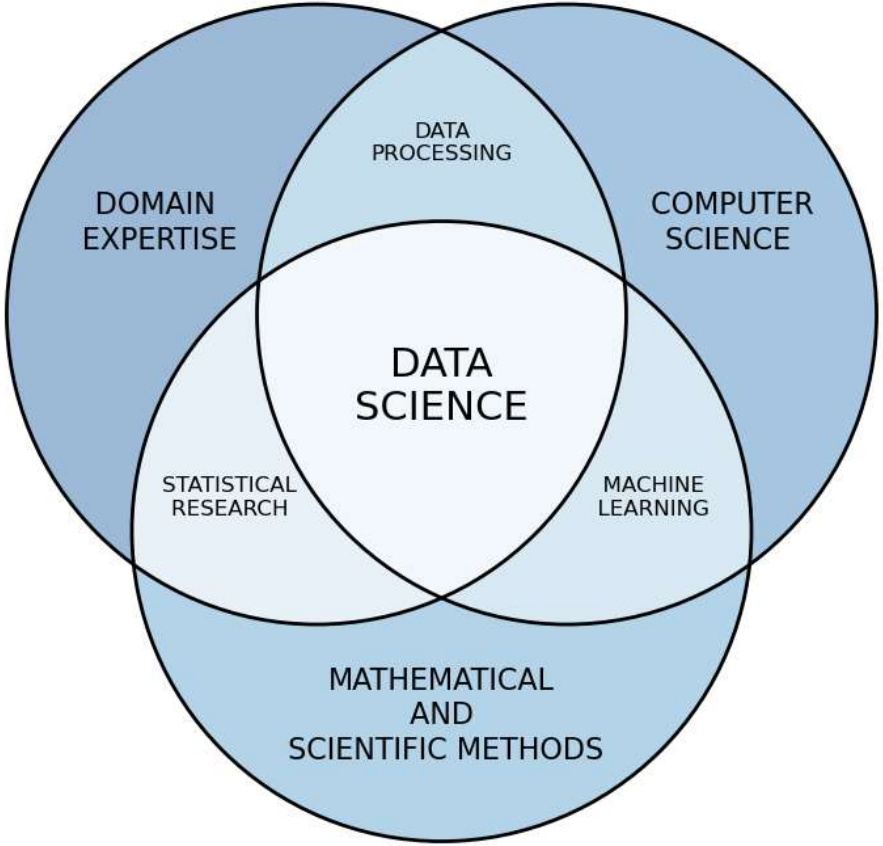
Rohini G. Khalkar, Adarsh Singh Dikhit, Anirudh Goel, Manisha Gupta, “Handwritten Text Recognition using Deep Learning (CNN & RNN)”, IARJSET 8(6):870-881, Jun 2021, url http://dx.doi.org/10.17148/IARJSET.2021.86148.



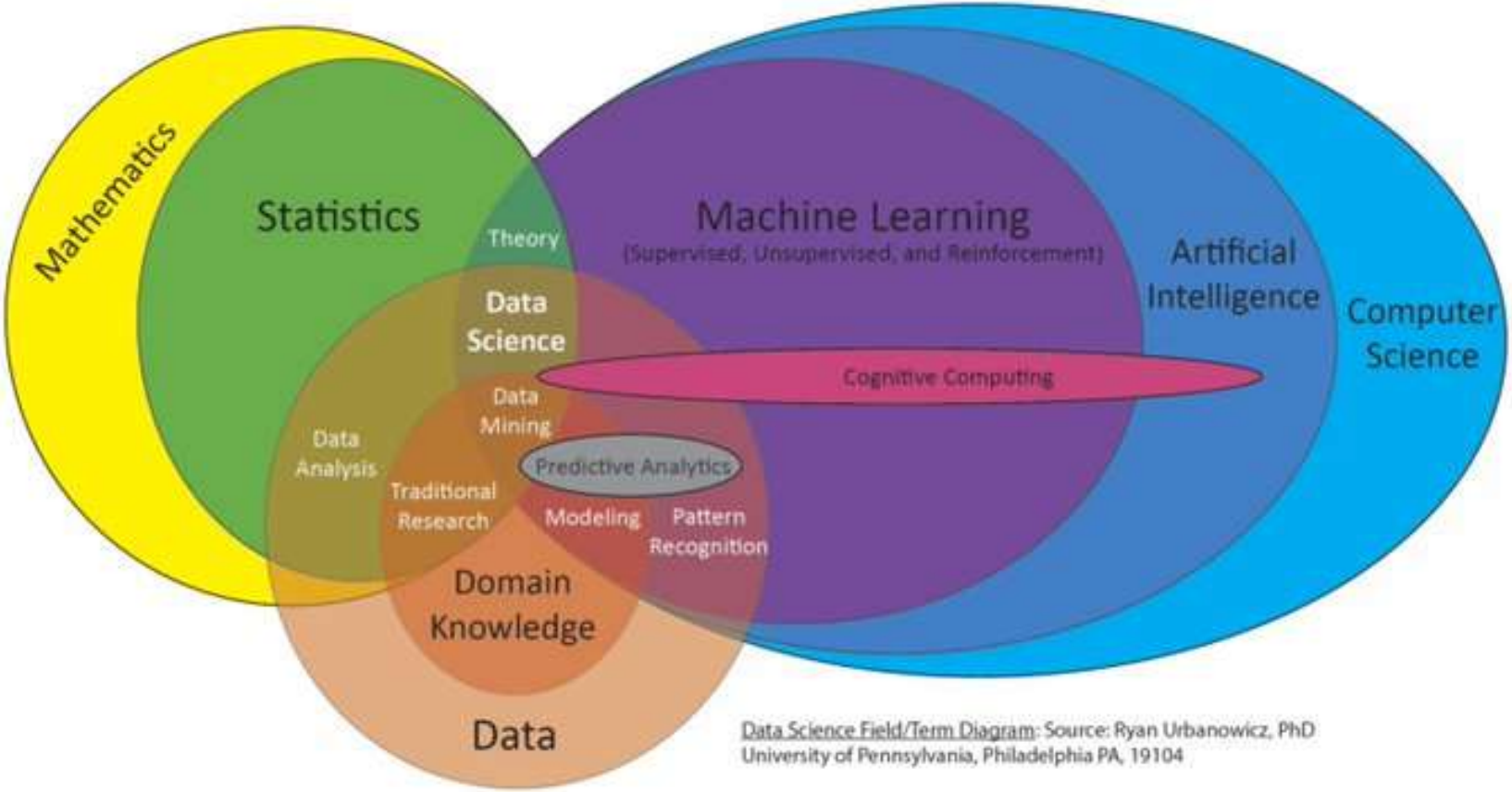
Sue Sentance, “Educating Young People in AI, Machine Learning, and Data Science: New Seminar Series”, Noise, 27 Jul 2021, url https://noise.getoto.net/2021/07/29/educating-young-people-in-ai-machine-learning-and-data-science-new-seminar-series/ [20230410].



Jon-Ting, Coursera, GitHub, url https://www.meal2home.top/ProductDetail.aspx?iid=380751683&pr=39.88 [20230410].

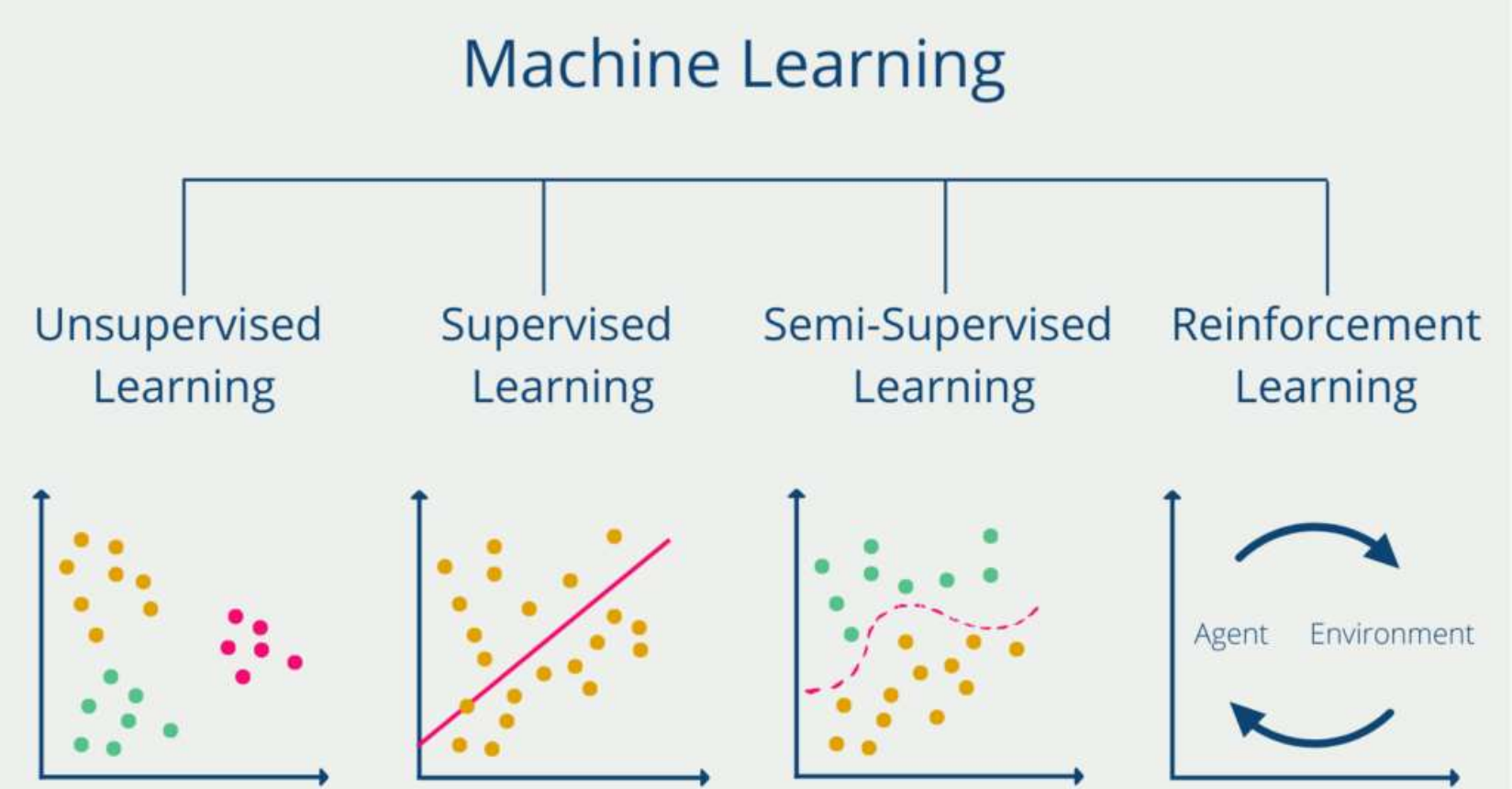


Rob Pascoe, “Data science”, Data Cymru, url https://www.data.cymru/data-science [20230410].



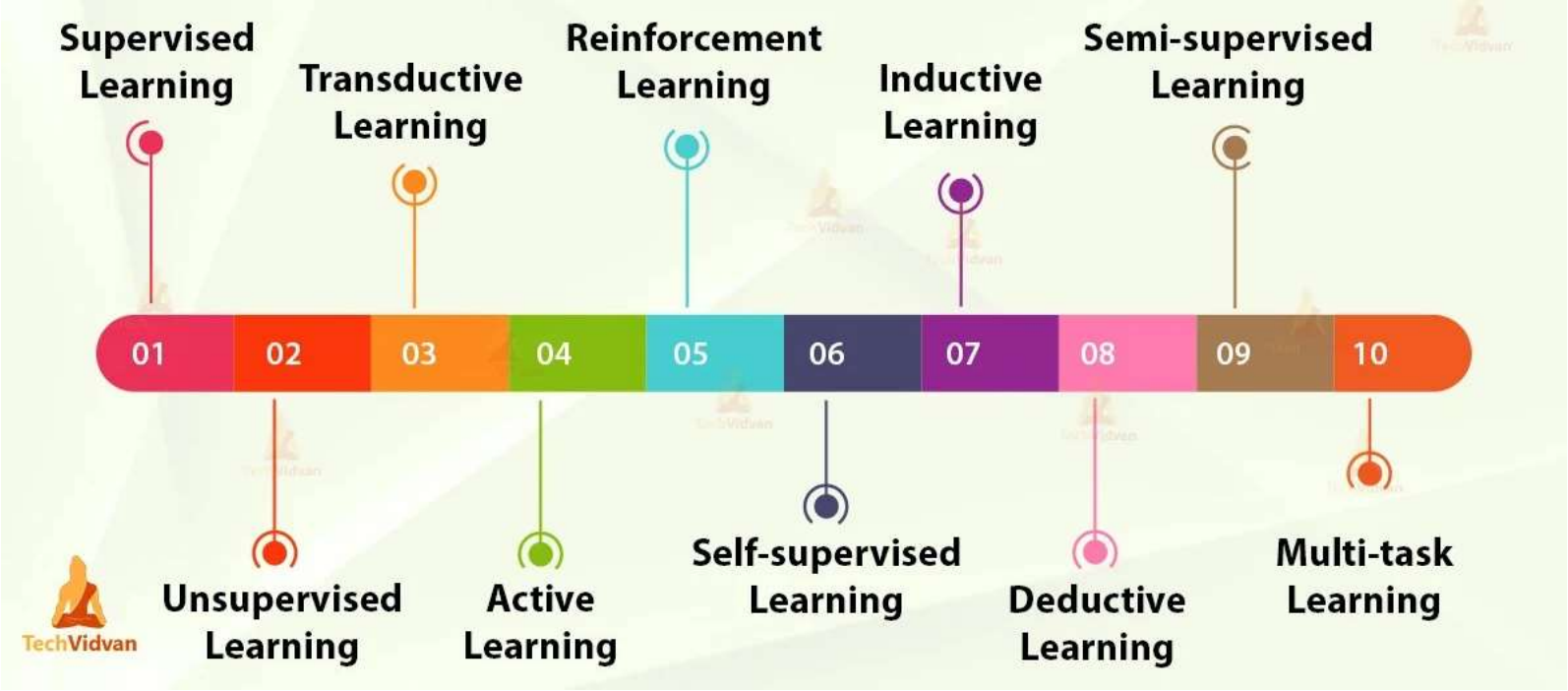
Ryan Urbanowicz, “New proposed field/term Venn diagram for an upcoming talk”, Twitter, 15 Jun 2018, url https://twitter.com/DocUrbs/status/1007375834347376642 [20230410].

Types



-, “Reinforcement Learning: Bestärkendes Lernen erklärt!”, Data Base Camp, 26 Jan 2022, url https://databasecamp.de/ki/reinforcement-learning [20230411].

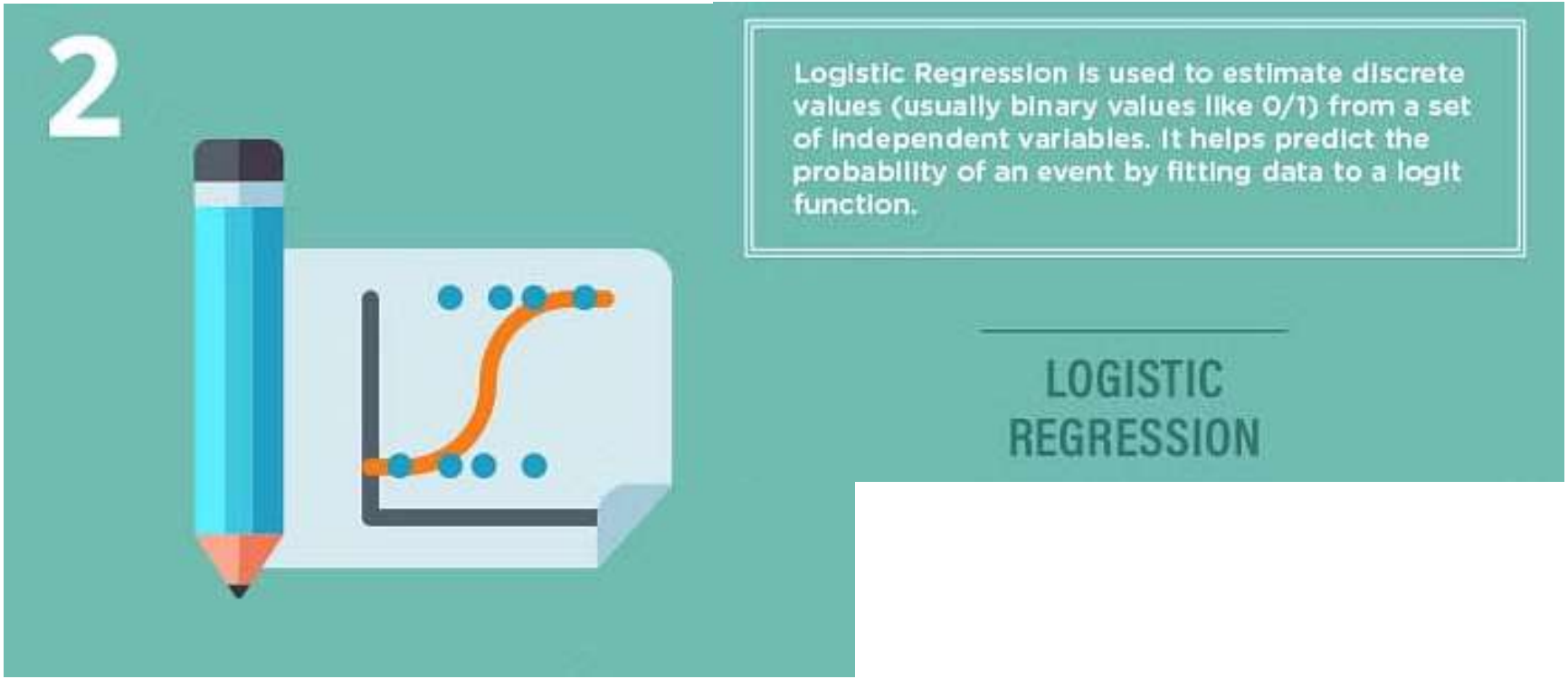
There is also another way for types of ML



TechVidvan Team, “Types of Machine Learning – Supervised, Unsupervised, Reinforcement”, Simplilearn, 10 Mar 2021, url https://techvidvan.com/tutorials/types-of-machine-learning/ [20230411].

Algorithms

Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].



Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].

Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].

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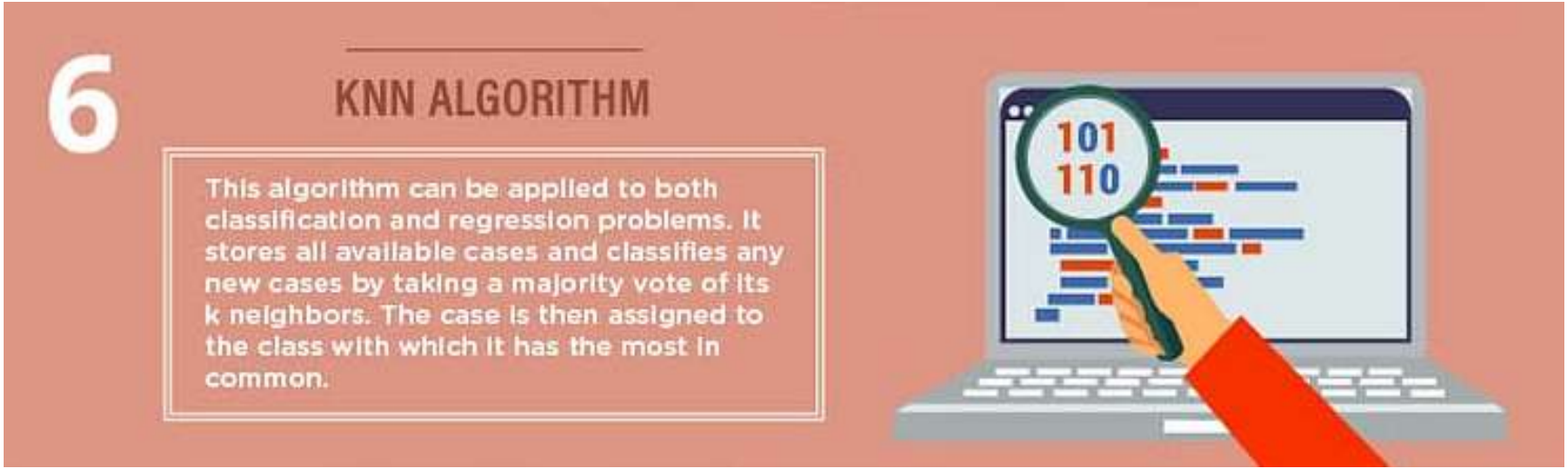
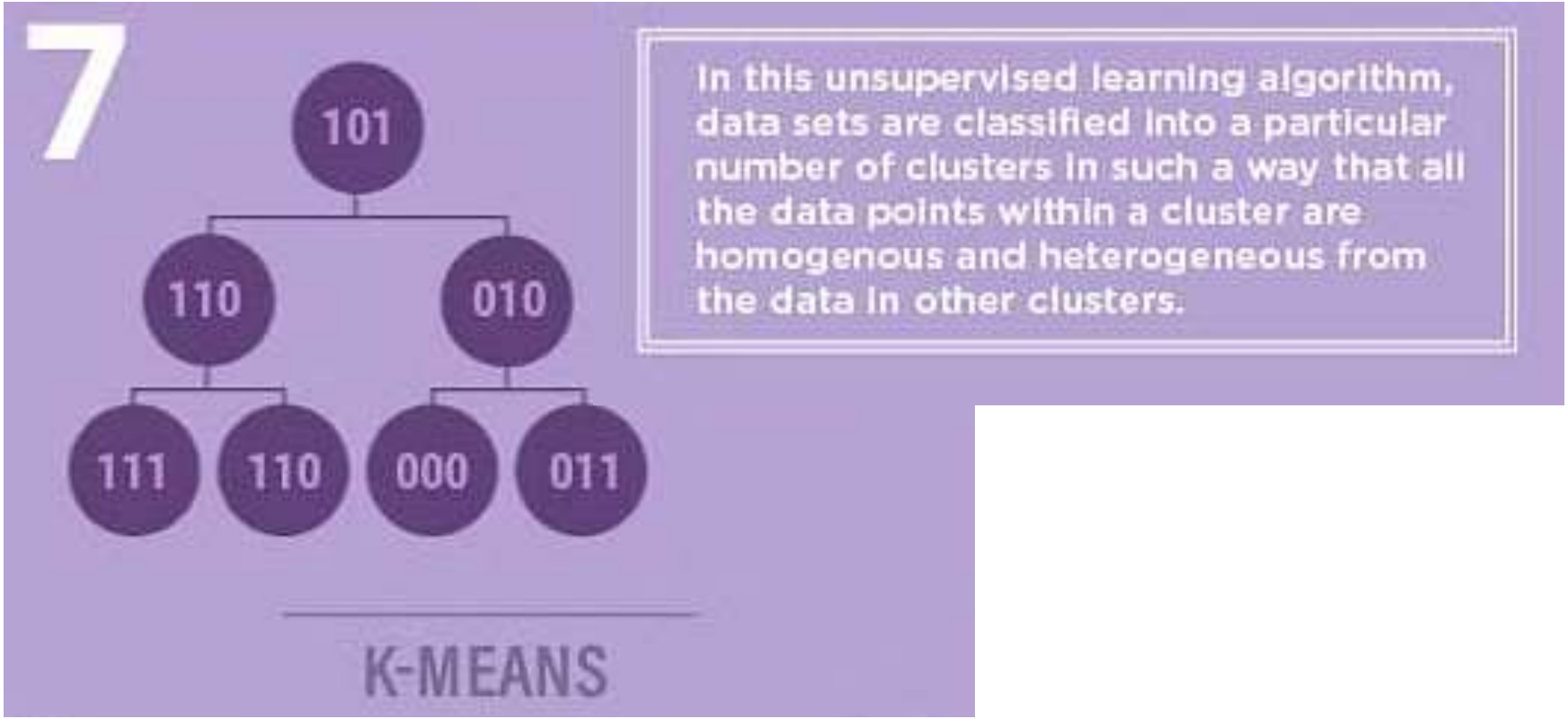
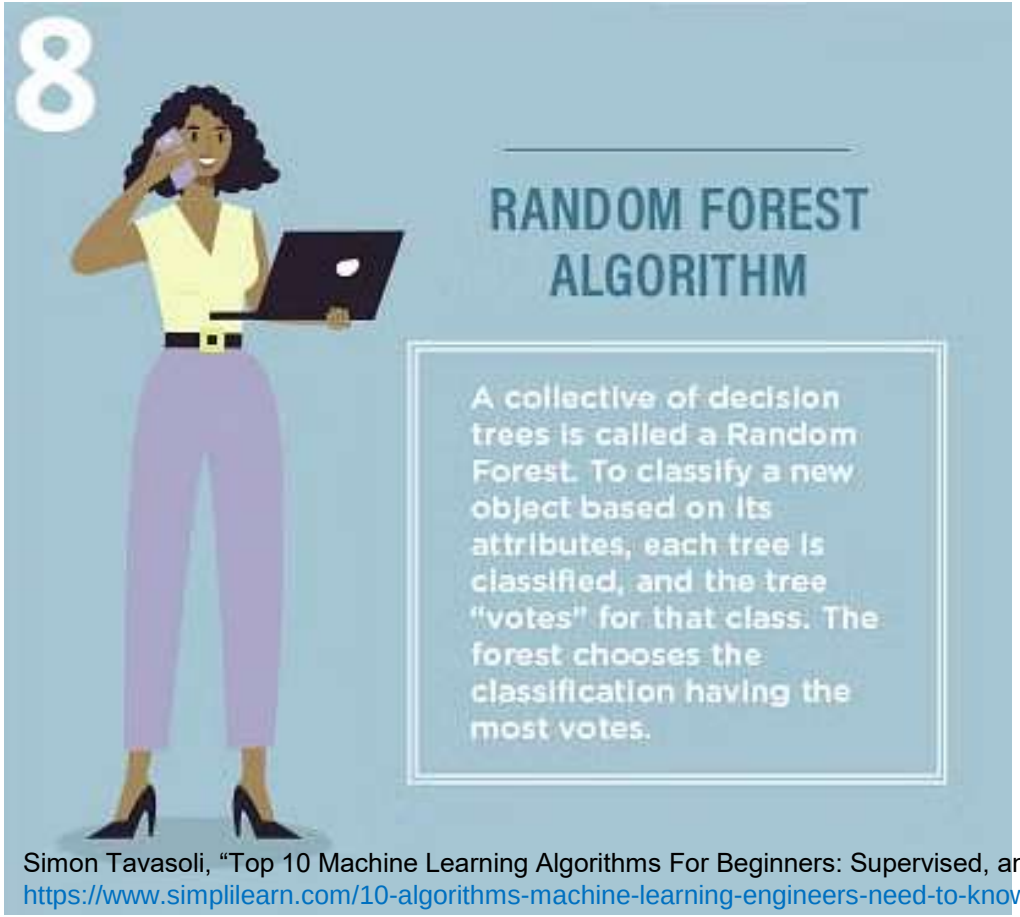
Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].



Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].



Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].

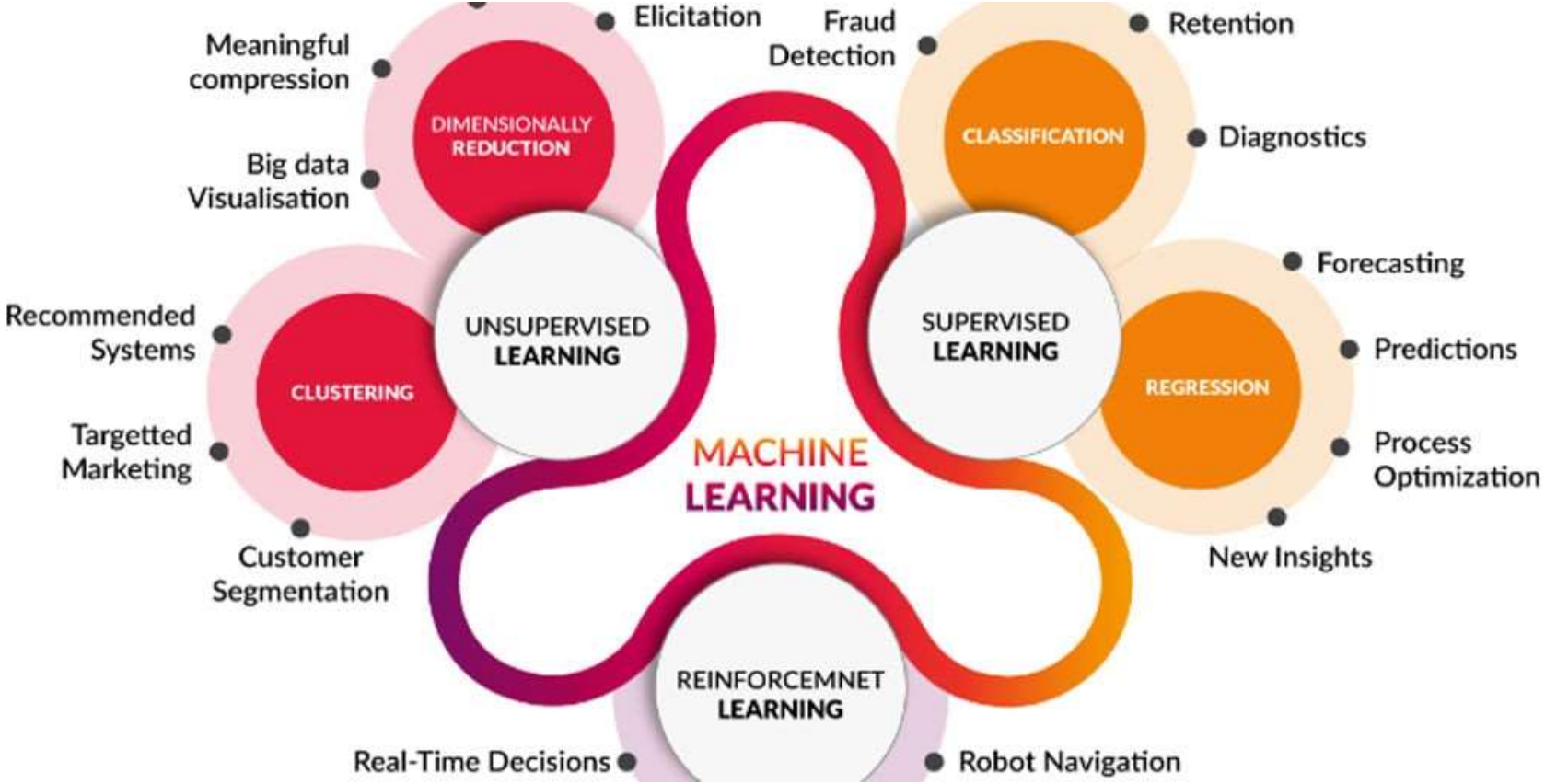


Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].

Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].

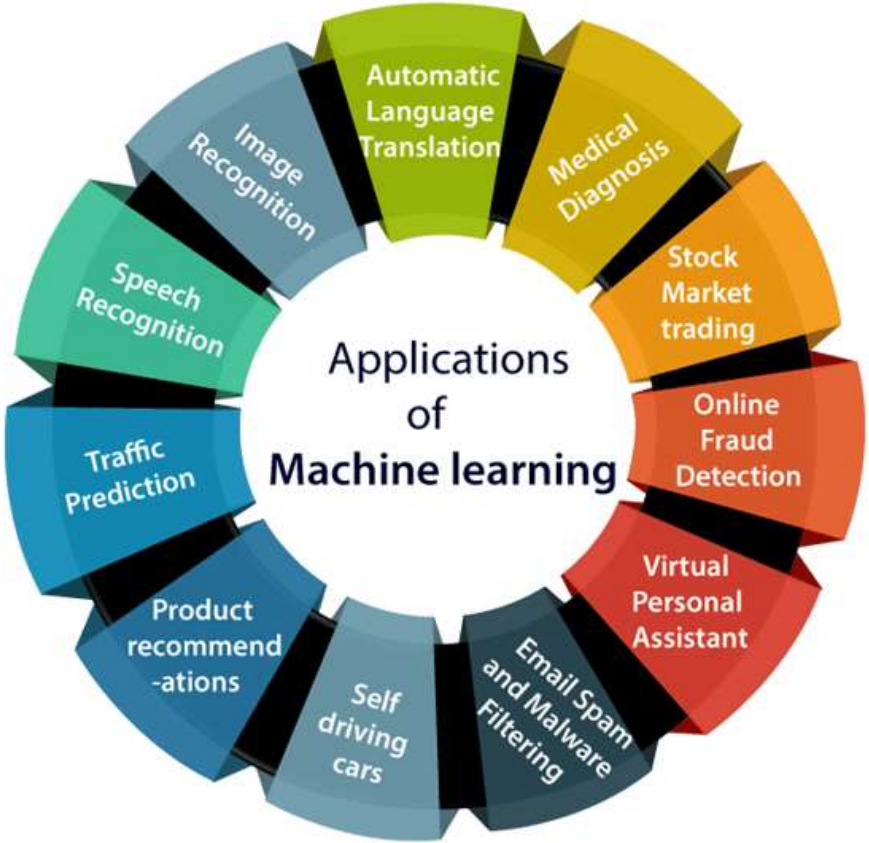
Simon Tavasoli, “Top 10 Machine Learning Algorithms For Beginners: Supervised, and More”, Simplilearn, 30 Mar 2023, url https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article [20230410].

Applications



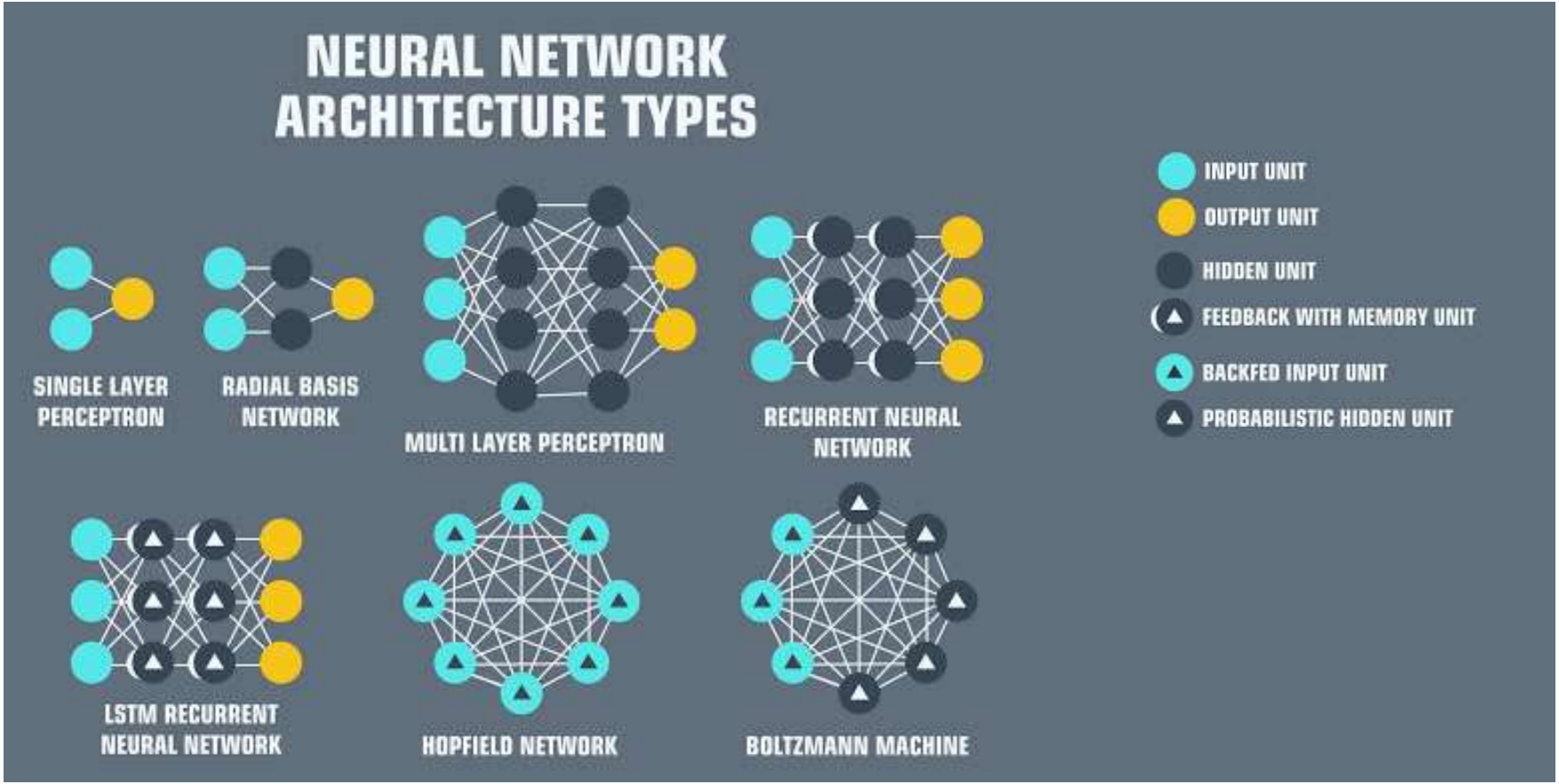
Mohaiminul Islam, “Machine Learning”, Kaggle, 6 Nov 2020, url https://www.kaggle.com/getting-started/195629 [20230411].

-, “Top Fascinating Application of Deep Learning”, Digital Leaders, 11 Oct 2020, url https://glweb.eu/blog/digital-transformation/155 [20230411].



-, “Applications of Machine learning”, JavaTpoint, url https://www.javatpoint.com/applications-of-machine-learning [20230411].

Architectures



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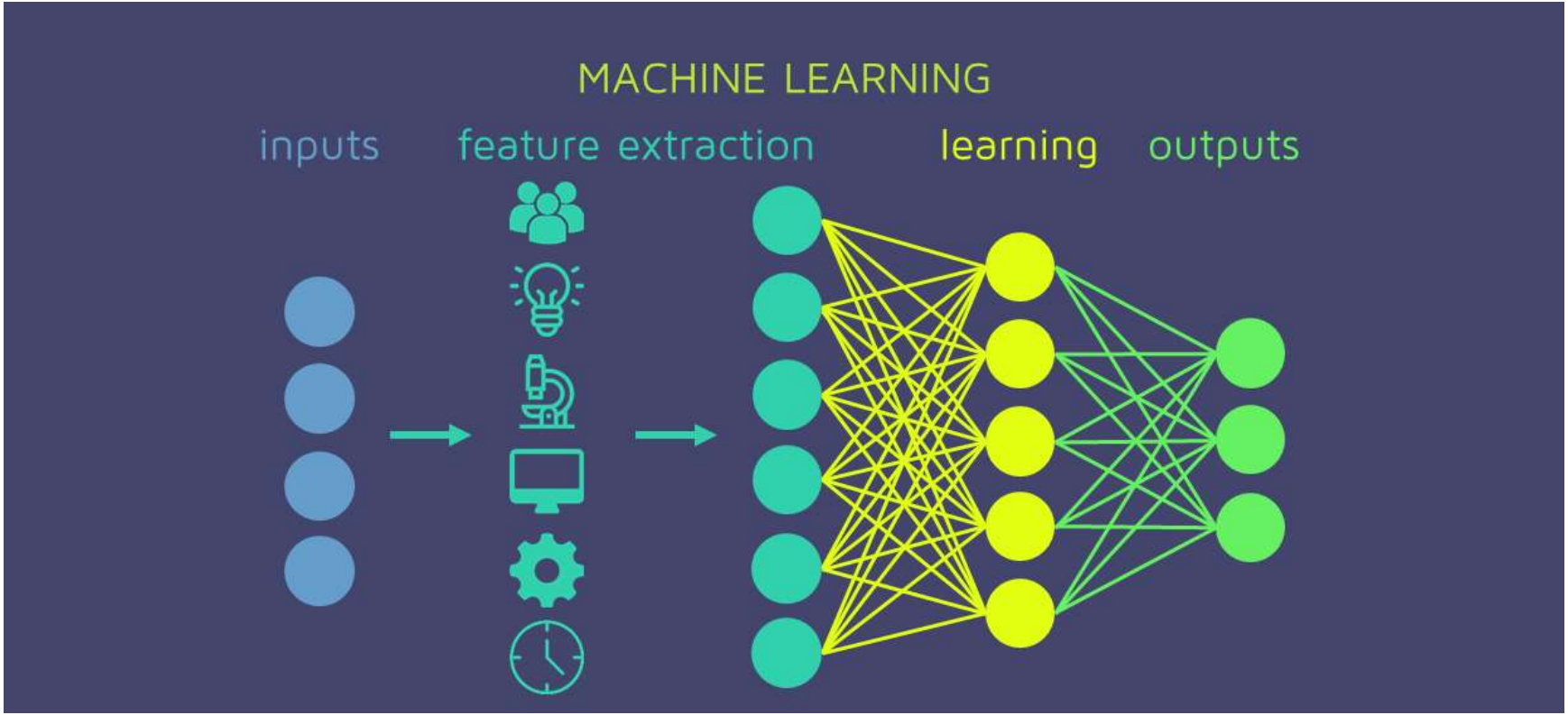
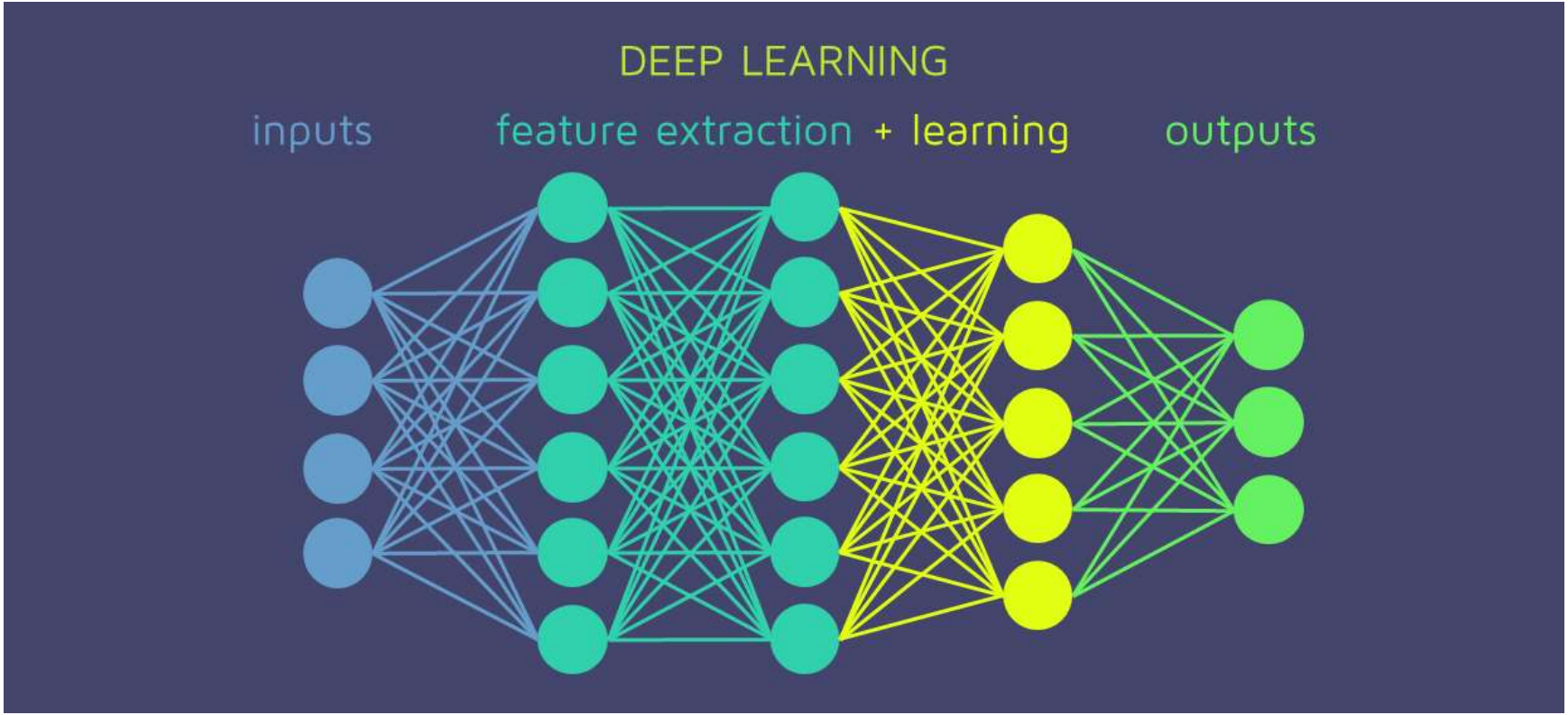
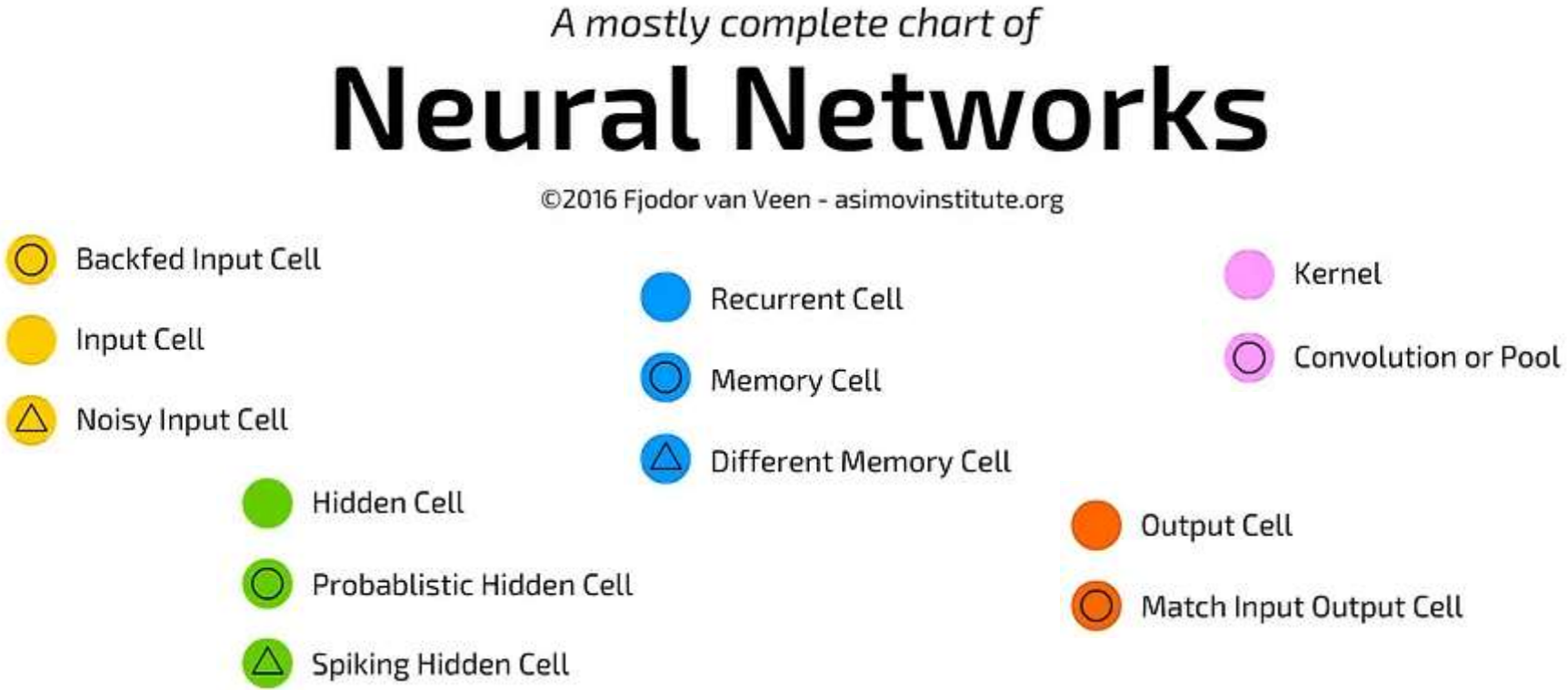


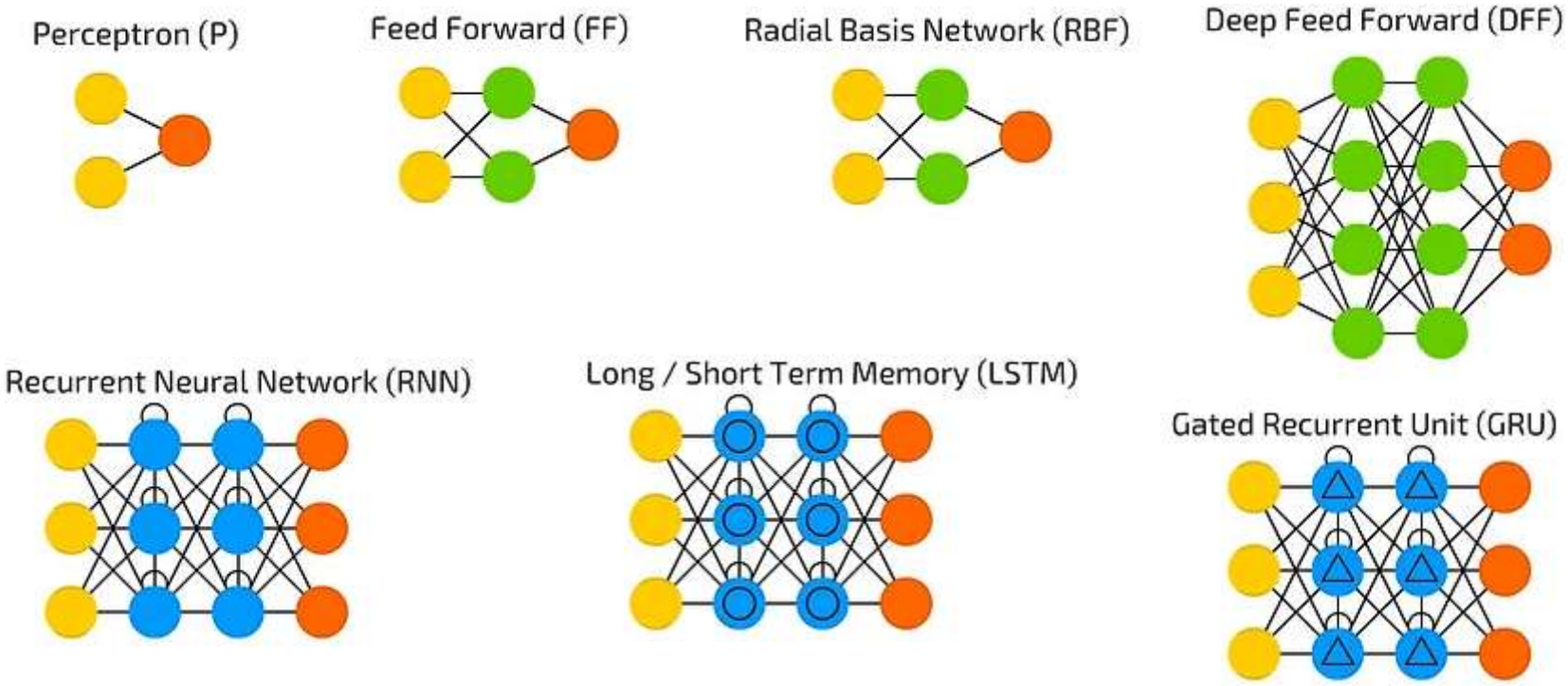
Mohaiminul Islam, “Machine Learning”, Kaggle, 6 Nov 2020, url https://www.kaggle.com/getting-started/195629 [20230411].



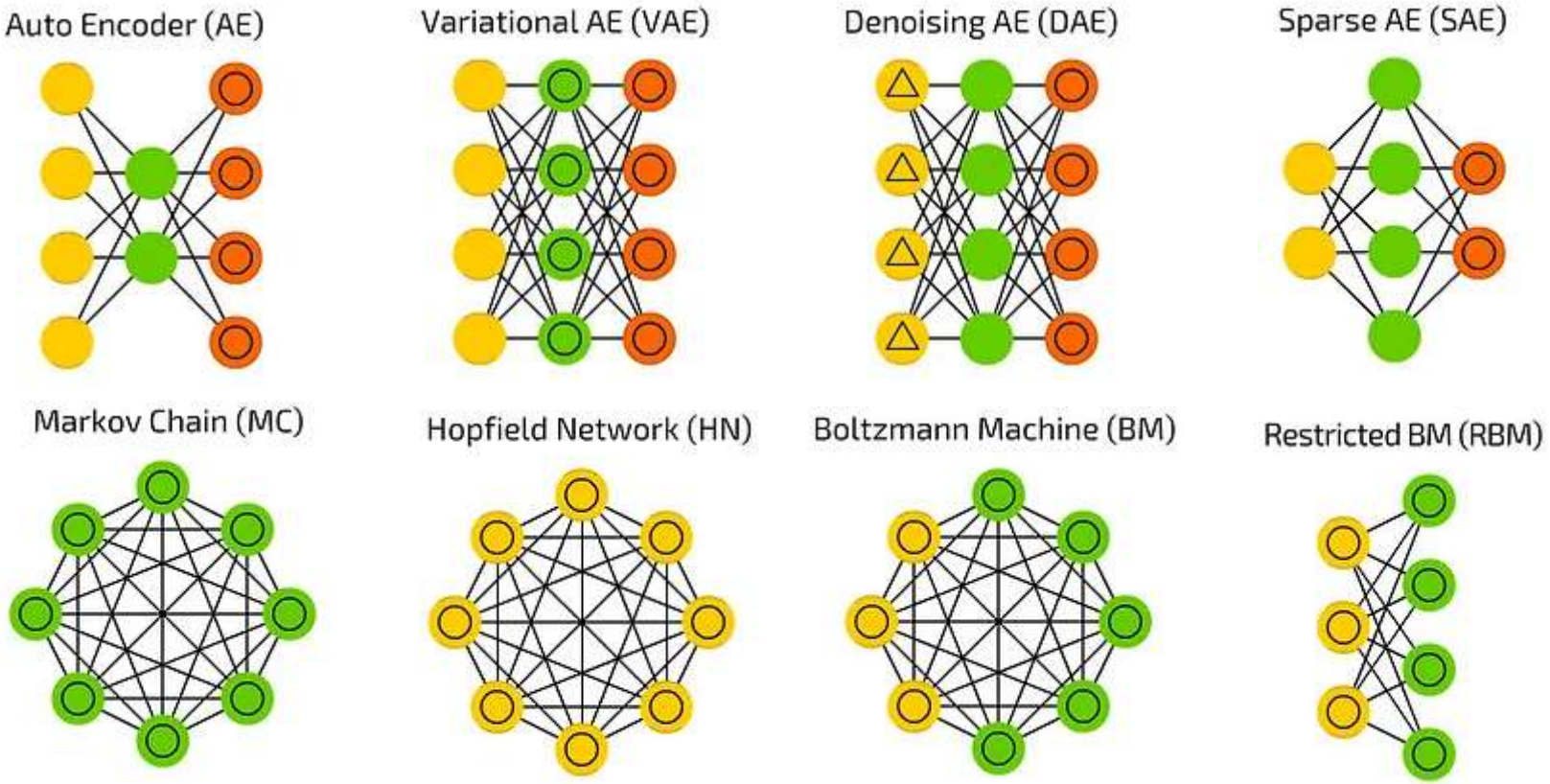
Mohaiminul Islam, “Machine Learning”, Kaggle, 6 Nov 2020, url https://www.kaggle.com/getting-started/195629 [20230411].



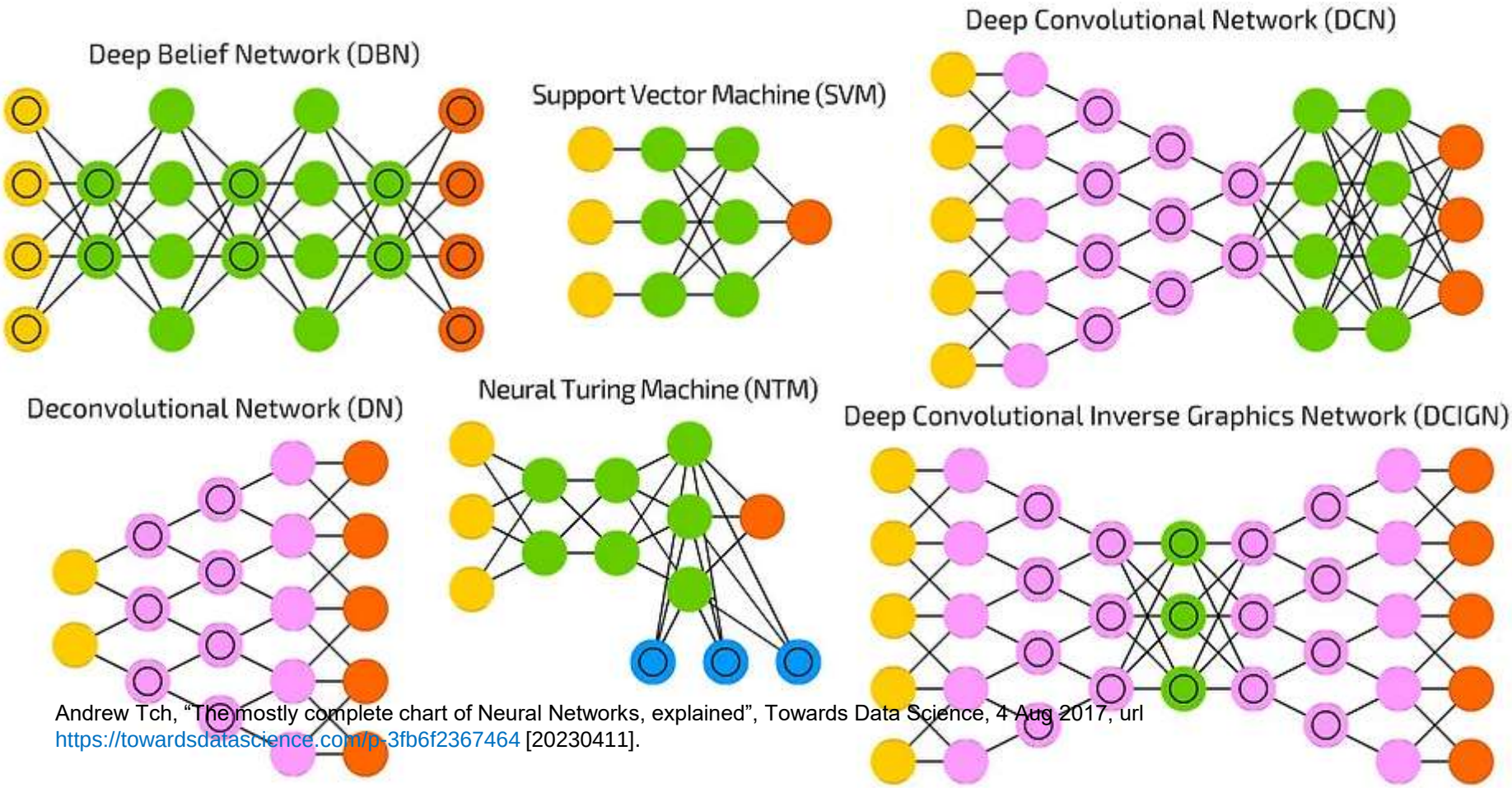
Andrew Tch, “The mostly complete chart of Neural Networks, explained”, Towards Data Science, 4 Aug 2017, url https://towardsdatascience.com/p-3fb6f2367464 [20230411].



Andrew Tch, “The mostly complete chart of Neural Networks, explained”, Towards Data Science, 4 Aug 2017, url https://towardsdatascience.com/p-3fb6f2367464 [20230411].



Andrew Tch, “The mostly complete chart of Neural Networks, explained”, Towards Data Science, 4 Aug 2017, url https://towardsdatascience.com/p-3fb6f2367464 [20230411].



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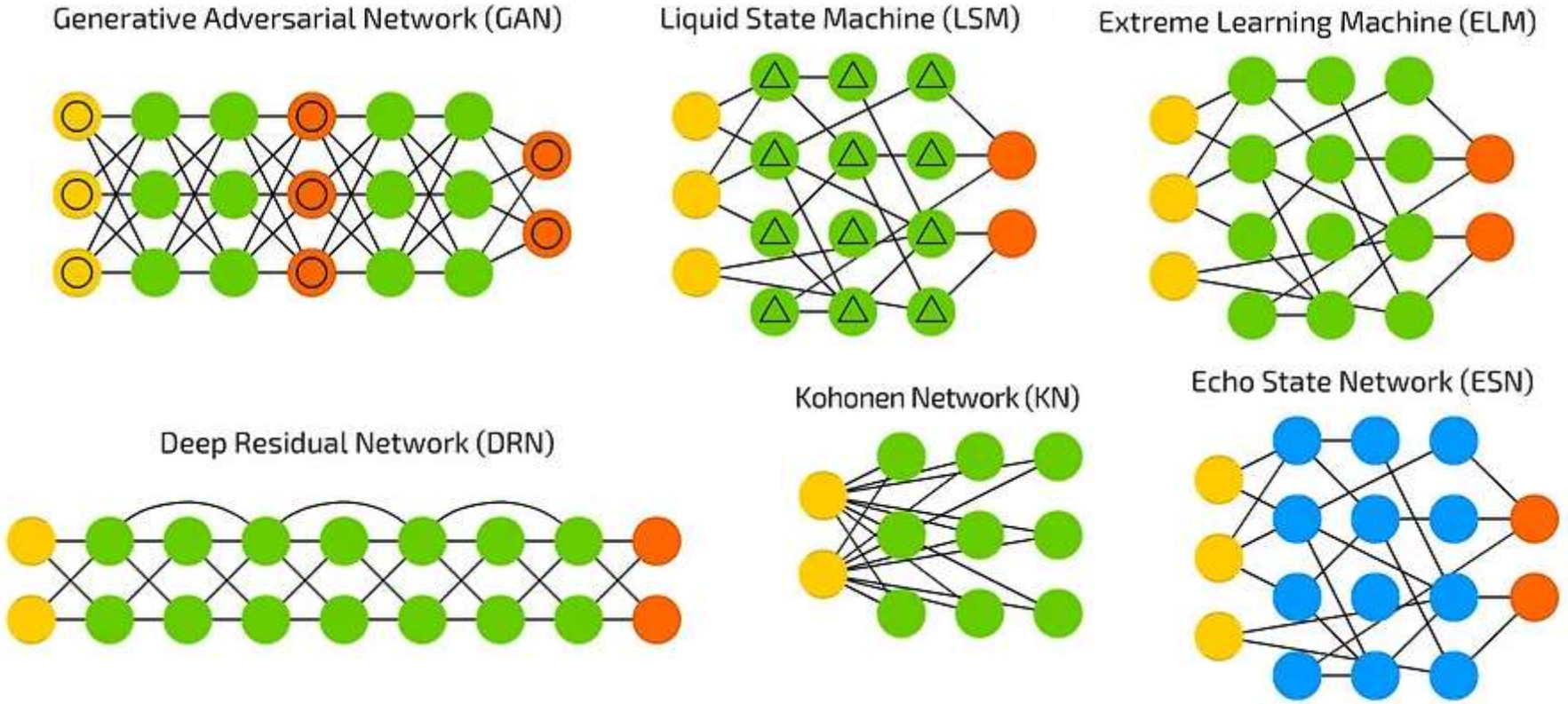

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Thank you

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