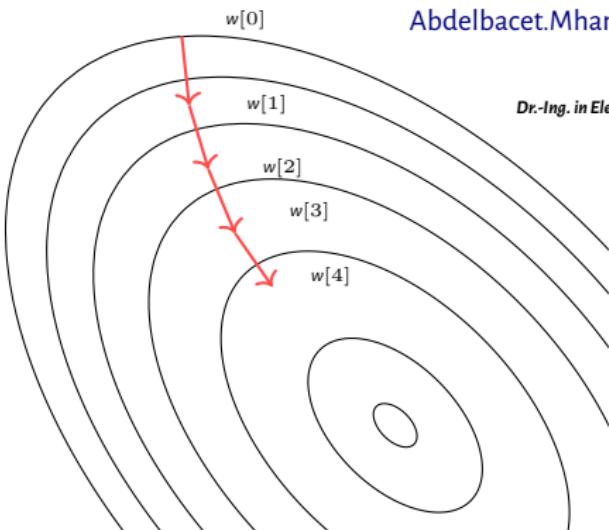


Machine Learning

(AN EARLY DRAFT)¹



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Dr.-Ing. in Electrical Engineering

“Computers are able to see, hear and learn.
Welcome to the future.”

Dave Waters

“This is nothing. In a few years, that bot will move
so fast you'll need a strobe light to see it.
Sweet dreams...”

Elon Musk

“Machine intelligence is the last invention
that humanity will ever need to make.”

Nick Bostrom

¹Available @ <https://github.com/a-mhamdi/isetbz/>



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Outline

- 1 An overview
- 2 Supervised Learning
- 3 Unsupervised Learning
- 4 Deep Learning

Next...

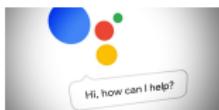
1 An overview

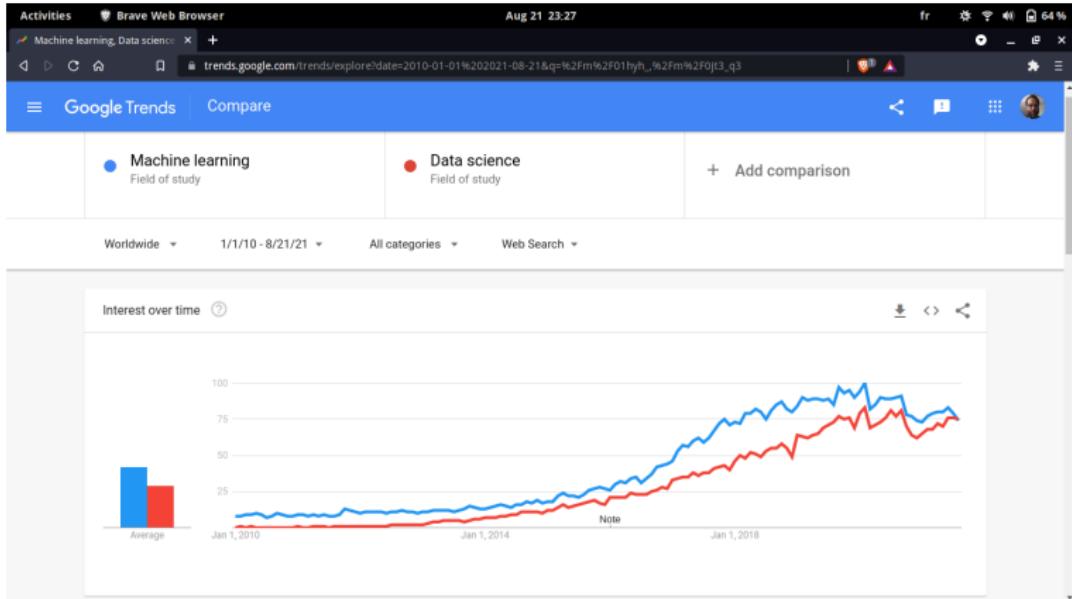
2 Supervised Learning

3 Unsupervised Learning

4 Deep Learning

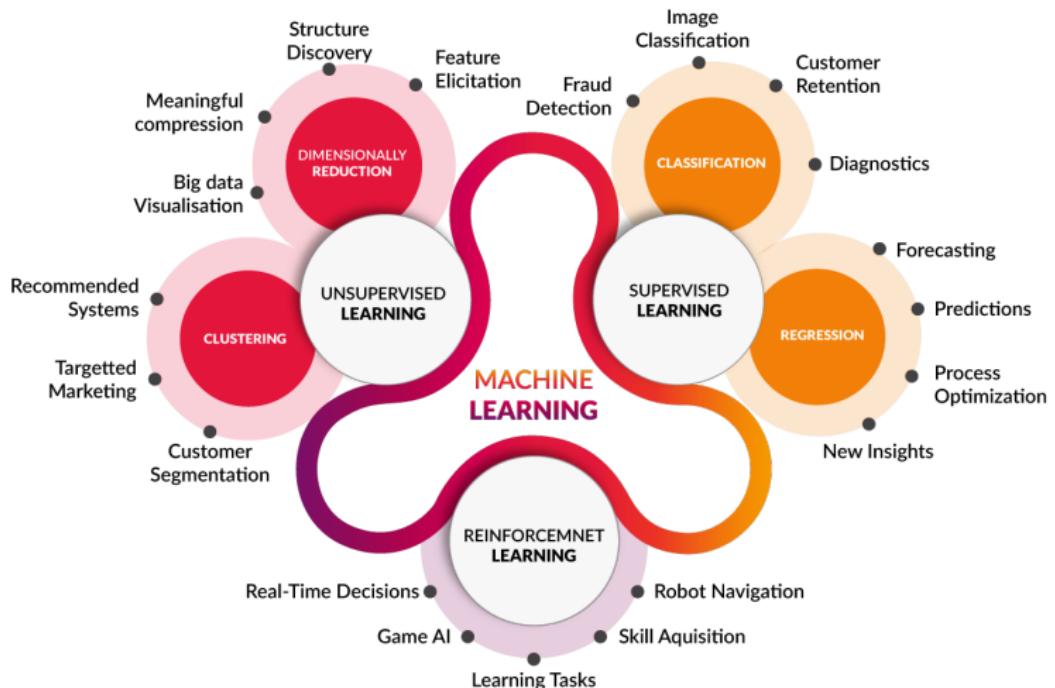
Top uses



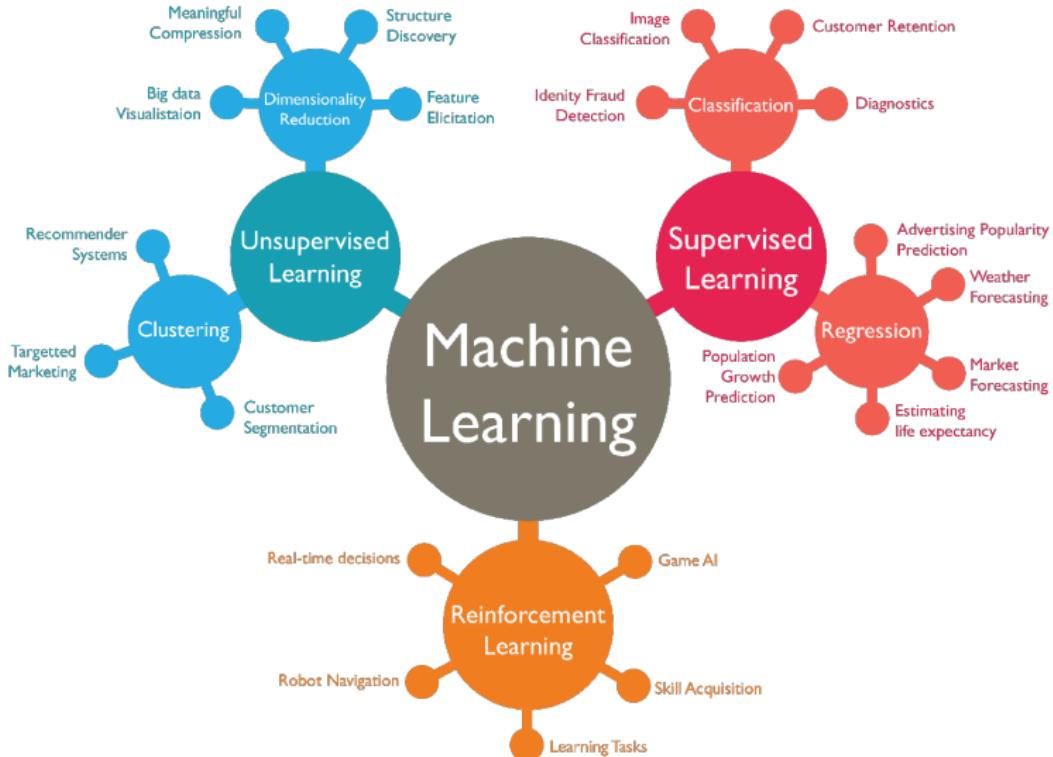


"Numbers represent search interest relative to the highest point on the chart for the given region and time.

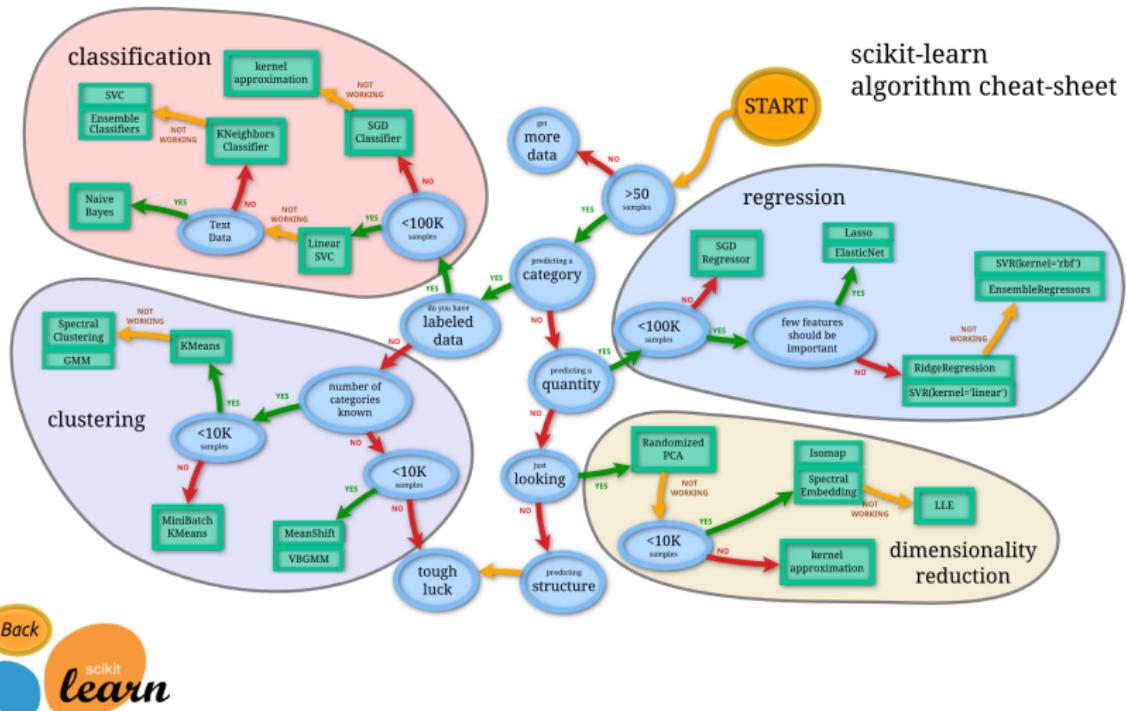
- A value of 100 is the peak popularity for the term;
- A value of 50 means that the term is half as popular;
- A score of 0 means there was not enough data for this term."



<https://www.cognub.com/index.php/cognitive-platform/>



<https://vitalflux.com/great-mind-maps-for-learning-machine-learning/>



Regression | Classification | Clustering

<https://github.com/MathWorks-Teaching-Resources/Machine-Learning-for-Regression>



Next...



1 An overview

2 **Supervised Learning**

3 Unsupervised Learning

4 Deep Learning

Next...



- 1 An overview
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- 3 Unsupervised Learning**
- 4 Deep Learning

Next...



- 1 An overview
- 2 Supervised Learning
- 3 Unsupervised Learning
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Further Reading



I. El Naqa and M. J. Murphy. "What Is Machine Learning?" In: *Machine Learning in Radiation Oncology: Theory and Applications*. Ed. by I. El Naqa, R. Li, and M. J. Murphy. Cham: Springer International Publishing, 2015, pp. 3–11. DOI: [10.1007/978-3-319-18305-3_1](https://doi.org/10.1007/978-3-319-18305-3_1).



J. Schmidt et al. "Recent advances and applications of machine learning in solid-state materials science". In: *npj Computational Materials* 5.1 (Aug. 2019). DOI: [10.1038/s41524-019-0221-0](https://doi.org/10.1038/s41524-019-0221-0).