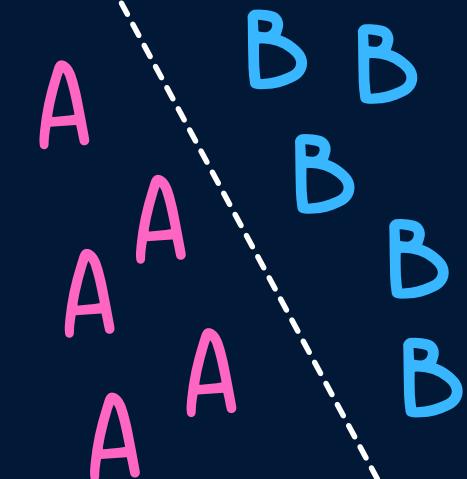


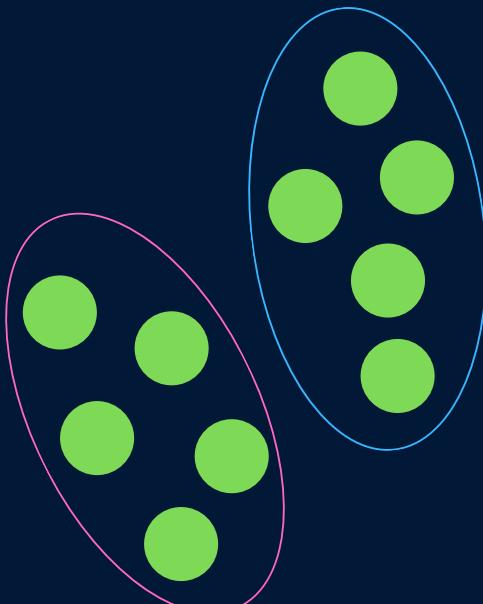
DATA SCIENCE INFINITY

Supervised
Learning



vs

Unsupervised
Learning





Supervised Learning and **Unsupervised Learning** are essentially just two broad areas within Machine Learning that are applied to solve tasks with slightly different end-goals

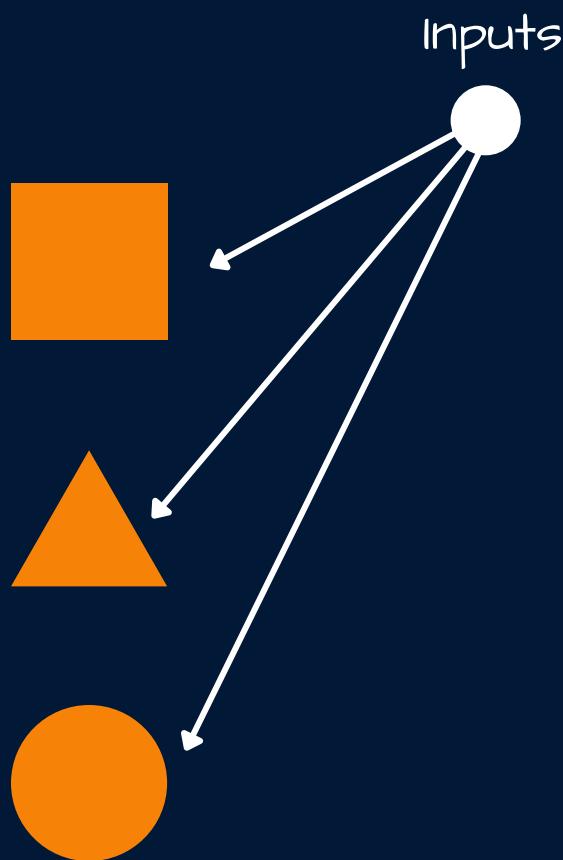
It is important to understand the difference, as well as which algorithms are useful for tasks that fall into each area

SUPERVISED

LEARNING

SUPERVISED LEARNING

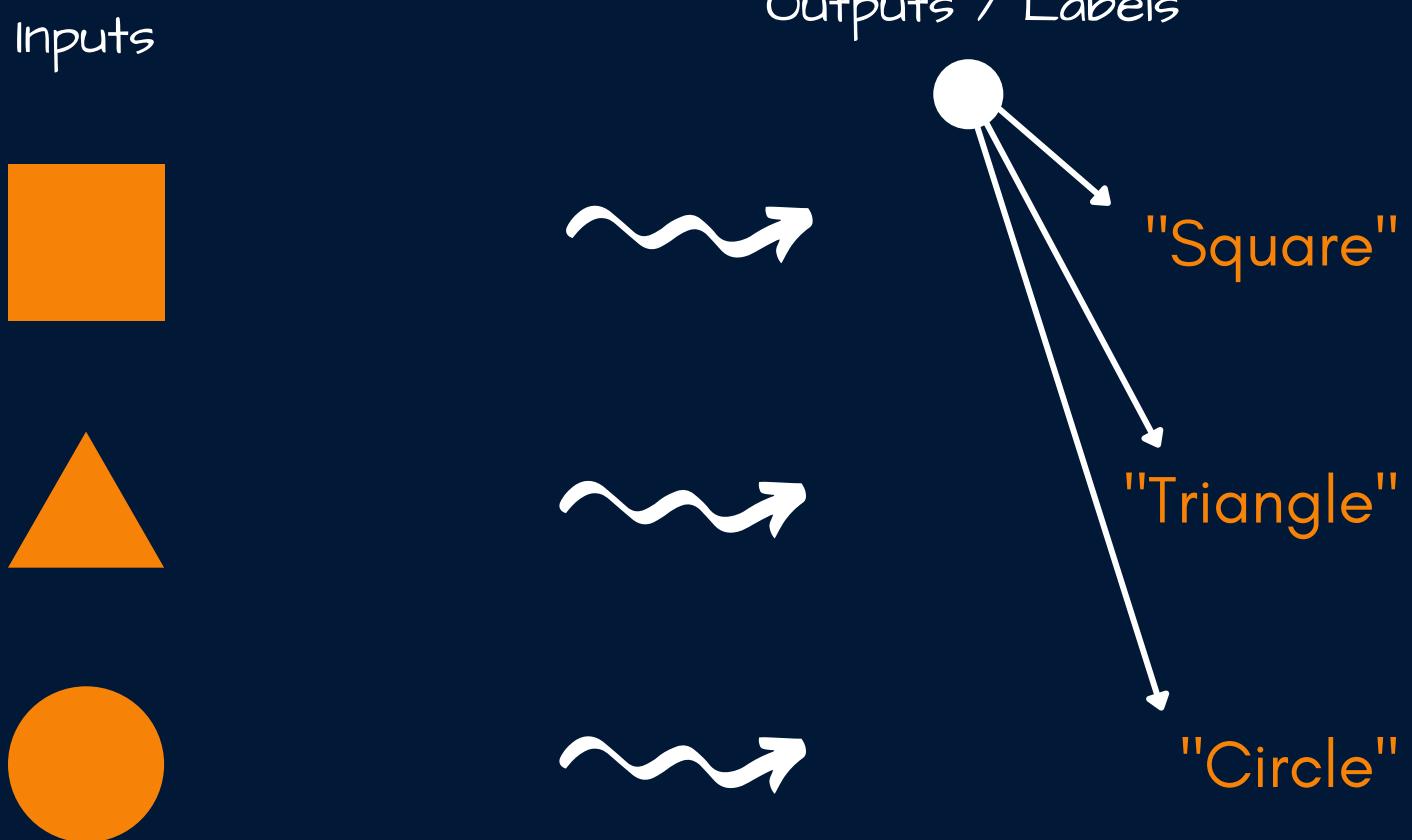
In Supervised Learning, we have **input data**...



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SUPERVISED LEARNING

and we have **output data**...

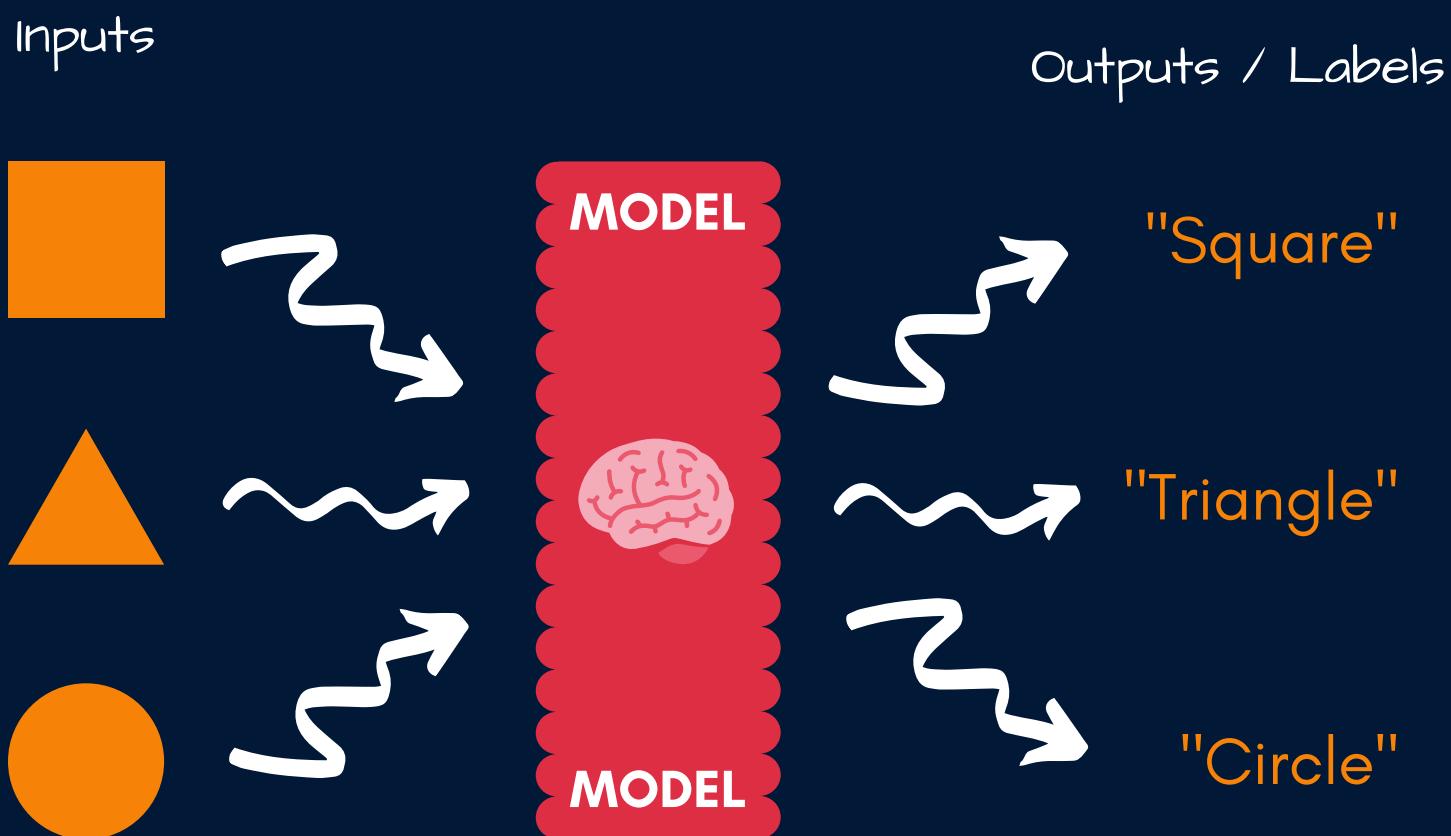


This output data is **known**, or **labelled**. A supervised Machine Learning algorithm looks to find generalised relationships that link the input data to the output data...

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We save these relationships as a **model**...

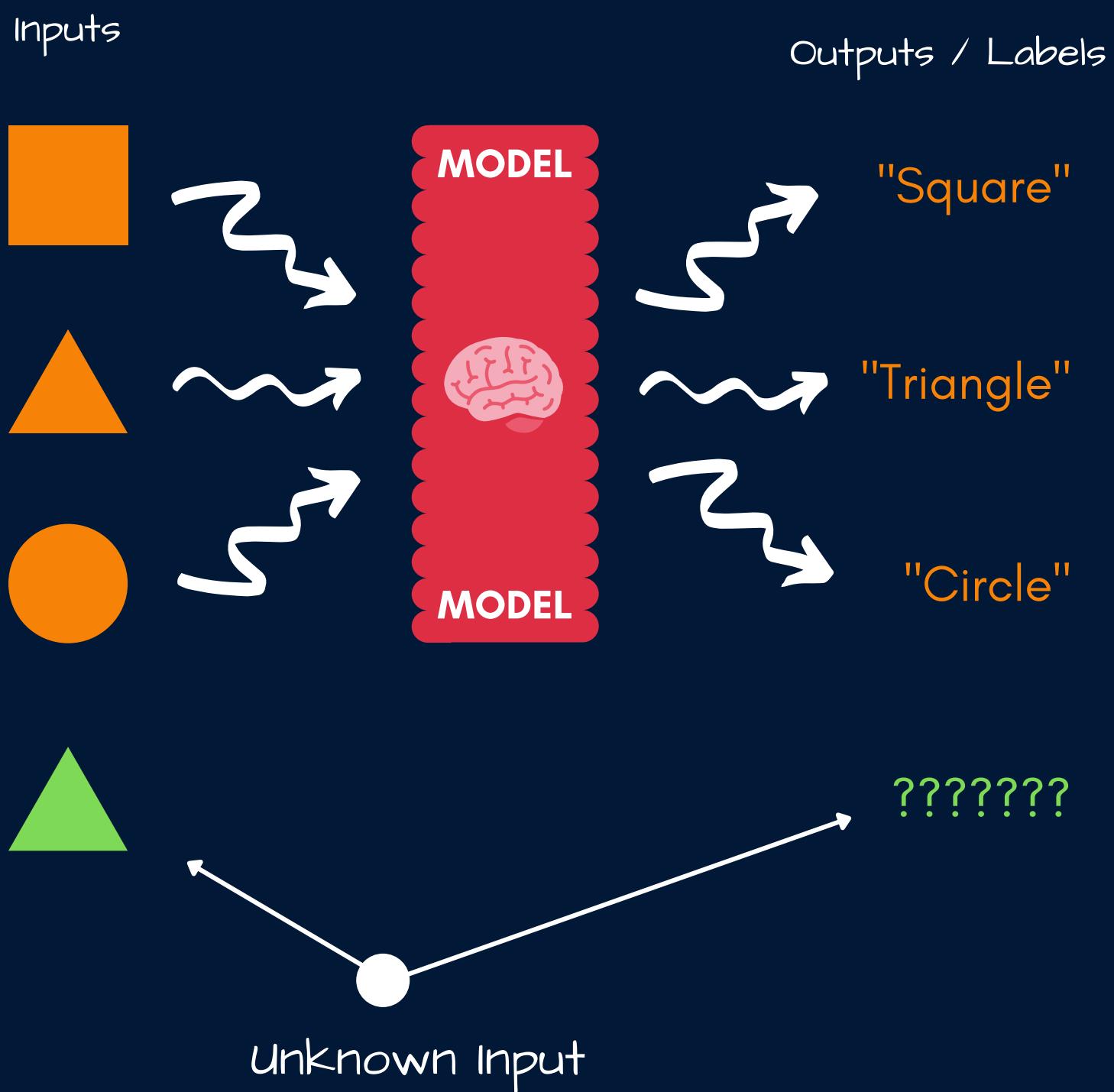


...meaning that when we are presented with...

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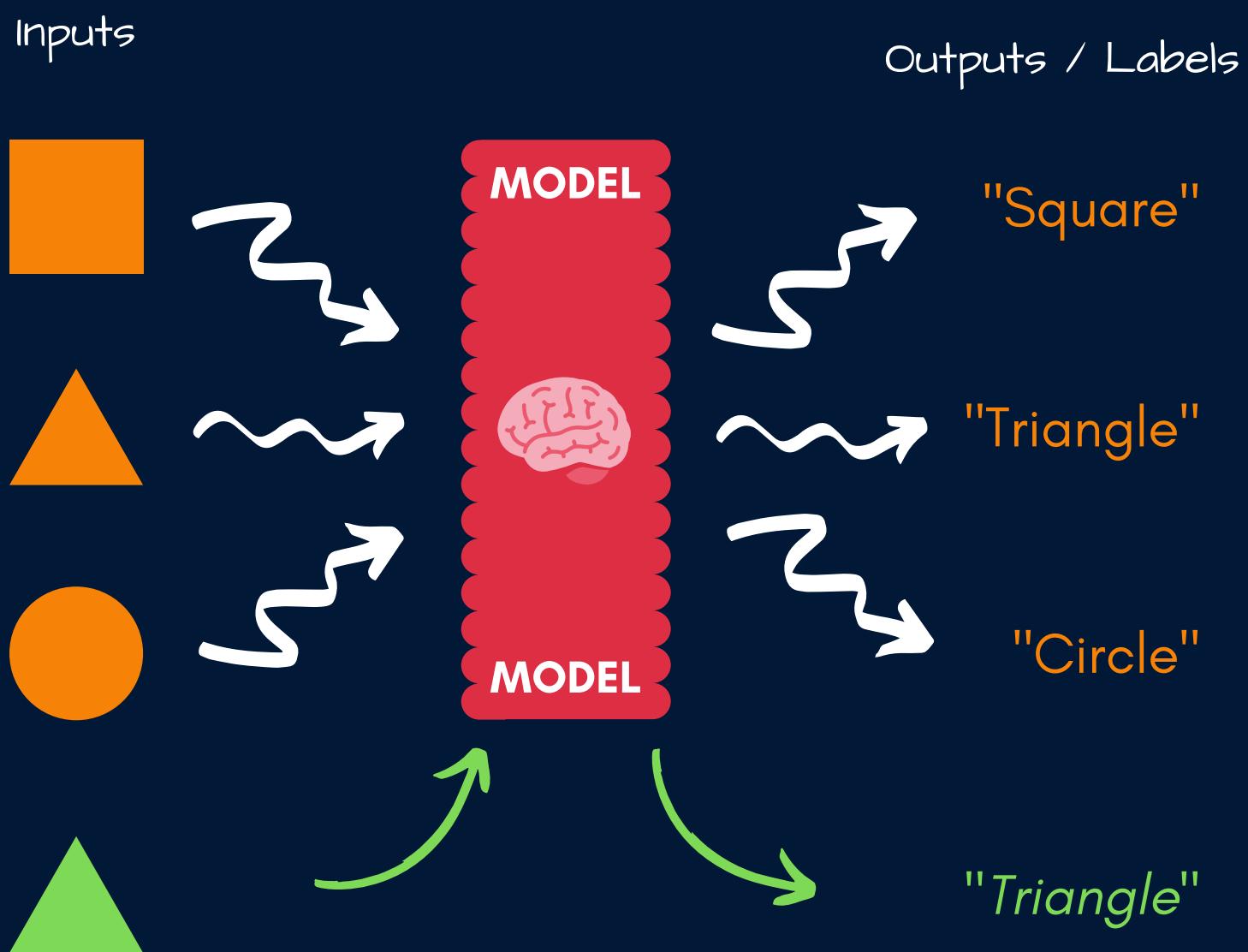
...an **unknown input** in the future...



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SUPERVISED LEARNING

...the model can assess the input, apply what it has learned...



...and provide a **prediction** of what the output might be!

SUPERVISED LEARNING

Supervised Learning will commonly be applied to **Regression** tasks (predicting a number) or **Classification** tasks (predicting a label or type)

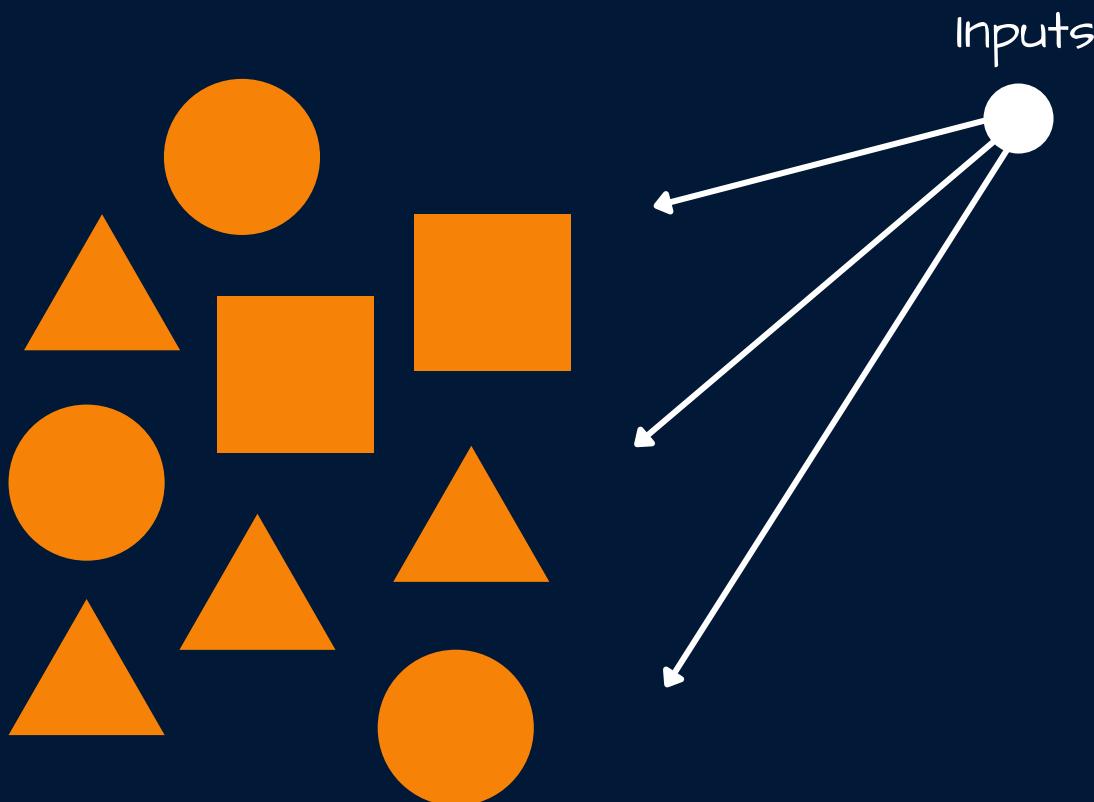
Examples of these algorithms are **Linear Regression, Logistic Regression, Decision Trees & Random Forests.** Artificial & Convolutional **Neural Networks** are also often applied to Supervised Learning tasks!

UNSUPERVISED

LEARNING

UNSUPERVISED LEARNING

In Unsupervised Learning, we essentially **just have input data** - nothing is pre-labelled!

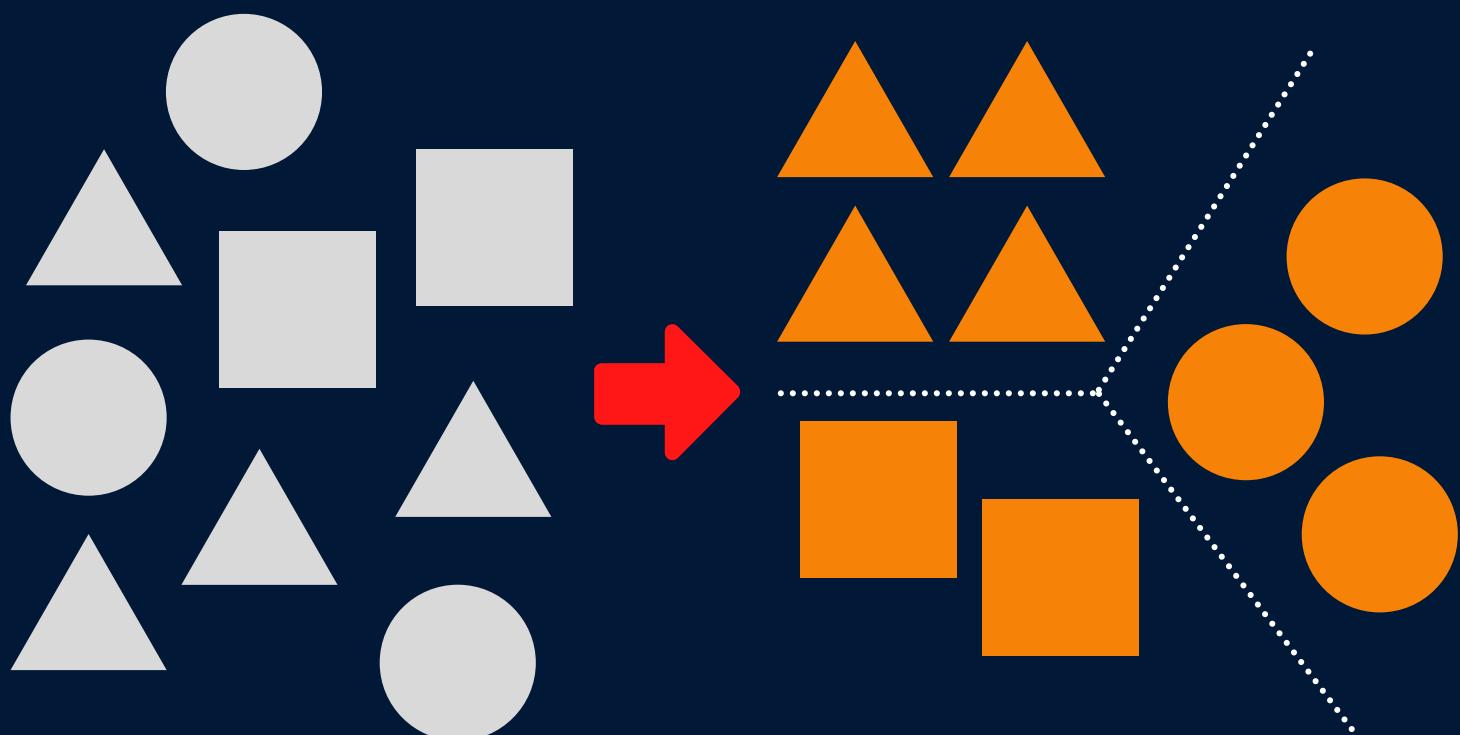


The goal in this scenario is for the algorithm to find...

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UNSUPERVISED LEARNING

...hidden structures and patterns in the data...



...often based upon how similar or dissimilar data-points are to each other.

SUPERVISED LEARNING

Unsupervised Learning will commonly be applied for **Clustering**, **Dimensionality Reduction**, or **Association** tasks

Examples of these algorithms are **k-means**, **DBSCAN**, **Apriori**, and **Principal Component Analysis!**



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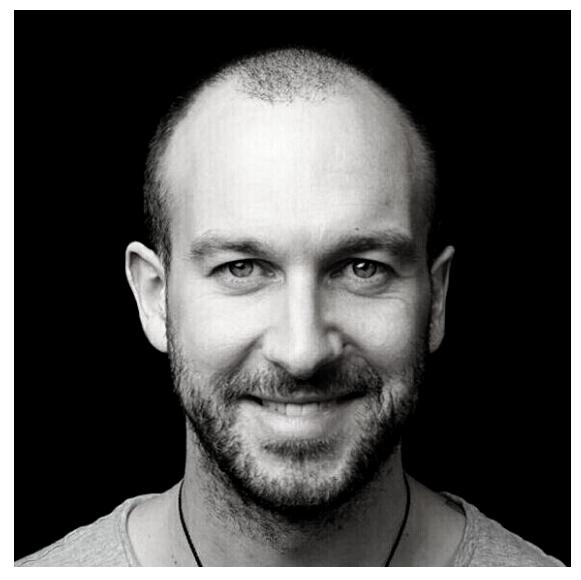


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What do DSI
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"I had over 40 interviews without an offer. After **DSI** I quickly got **7 offers** including one at **KPMG** and my amazing new role at **Deloitte**!"

- Ritesh



"The **best program** I've been a part of, hands down"

- Christian



"DSI is **incredible** - everything is taught in such a clear and simple way, even the more complex concepts!"

- Arianna



"**I got it!** Thank you so much for all your advice & help with preparation - it truly gave me the **confidence** to go in and **land the job**!"

- Marta





"I've taken a number of Data Science courses, **and without doubt**, DSI is the best"

- William



"One of the best purchases towards learning I have ever made"

- Scott



"I learned more than on **any other course**, or reading entire books!"

- Erick



"I started a bootcamp last summer through a well respected University, **but I didn't learn half as much from them!**"

- GA





"100% worth it, it is amazing. I have never seen such a good course and I have done plenty of them!"

- Khatuna



"This is a world-class Data Science experience. I would recommend this course to every aspiring or professional Data Scientist"

- David



"Andrew's guidance with my Resume & throughout the interview process helped me land my amazing new role (**and at a much higher salary than I expected!**)"

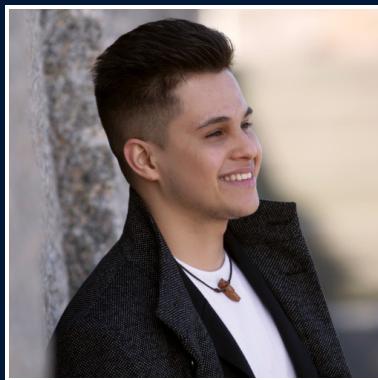
- Barun



"DSI is a **fantastic community & Andrew** is one of the best instructors!"

- Keith





"I'm now at University, and my Data Science related subjects are a **piece of cake** after completing this course!

I'm so glad I enrolled!"

- Jose



"In addition to the great content, Andrew's dedication to the growing DS1 community is **amazing**"

- Sophie



"The course has such high quality content - you get your ROI even from the first module"

- Donabel



"The Statistics 101 section was awesome! I have now started to get confidence in Statistics!"

- Shrikant





"I can't emphasise how good this programme is...well worth the investment!"

- Dejan



"I'd completed my Master's in Business Analytics, but DSI was the first time I felt I had a solid foundation in Data Science to go forward with"

- Scott

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