

# So what's this machine learning all about?



Alex Whittles



[Alex@PurpleFrogSystems.com](mailto:Alex@PurpleFrogSystems.com)

[PurpleFrogSystems.com](http://PurpleFrogSystems.com)

[PurpleFrogSystems.com/blog](http://PurpleFrogSystems.com/blog)

[@PurpleFrogAlex](https://twitter.com/PurpleFrogAlex)



@PurpleFrogAlex



www.purplefrogsystems.com



# Alex Whittles



- SQL Relay Committee  [SQLRelay.co.uk](http://SQLRelay.co.uk)
- SQL Bits Committee  [SQLBits.com](http://SQLBits.com)
- Birmingham Data Meetup  [SQLMidlands.com](http://SQLMidlands.com)
- MSc in Business Intelligence, CEng, CITP, FBCS, FIOEE, MIET, MIOD
- Run  BI Consultancy



## Business Intelligence Consultancy

Data Analytics  
OLAP Cubes  
Machine Learning

Data Warehousing  
Reporting Systems  
Managed Service



@PurpleFrogAlex



[www.purplefrogsystems.com](http://www.purplefrogsystems.com)





# POWER BI SENTINEL

- Automated Documentation
- Scheduled Backups
- Change Tracking
- Data Lineage Reporting



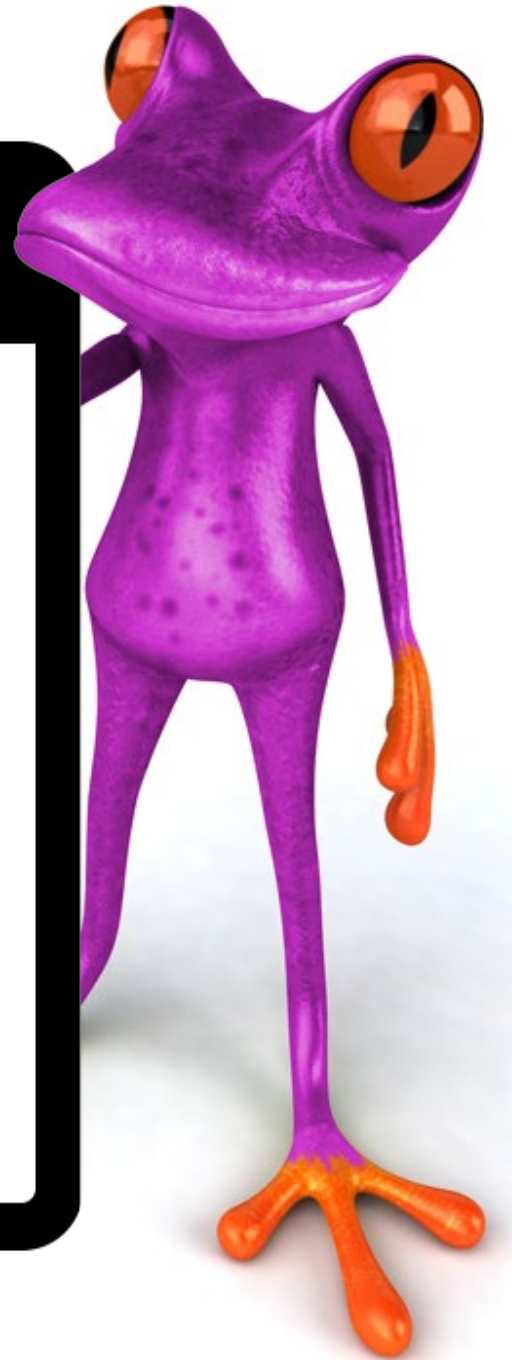
# Agenda

What is it?

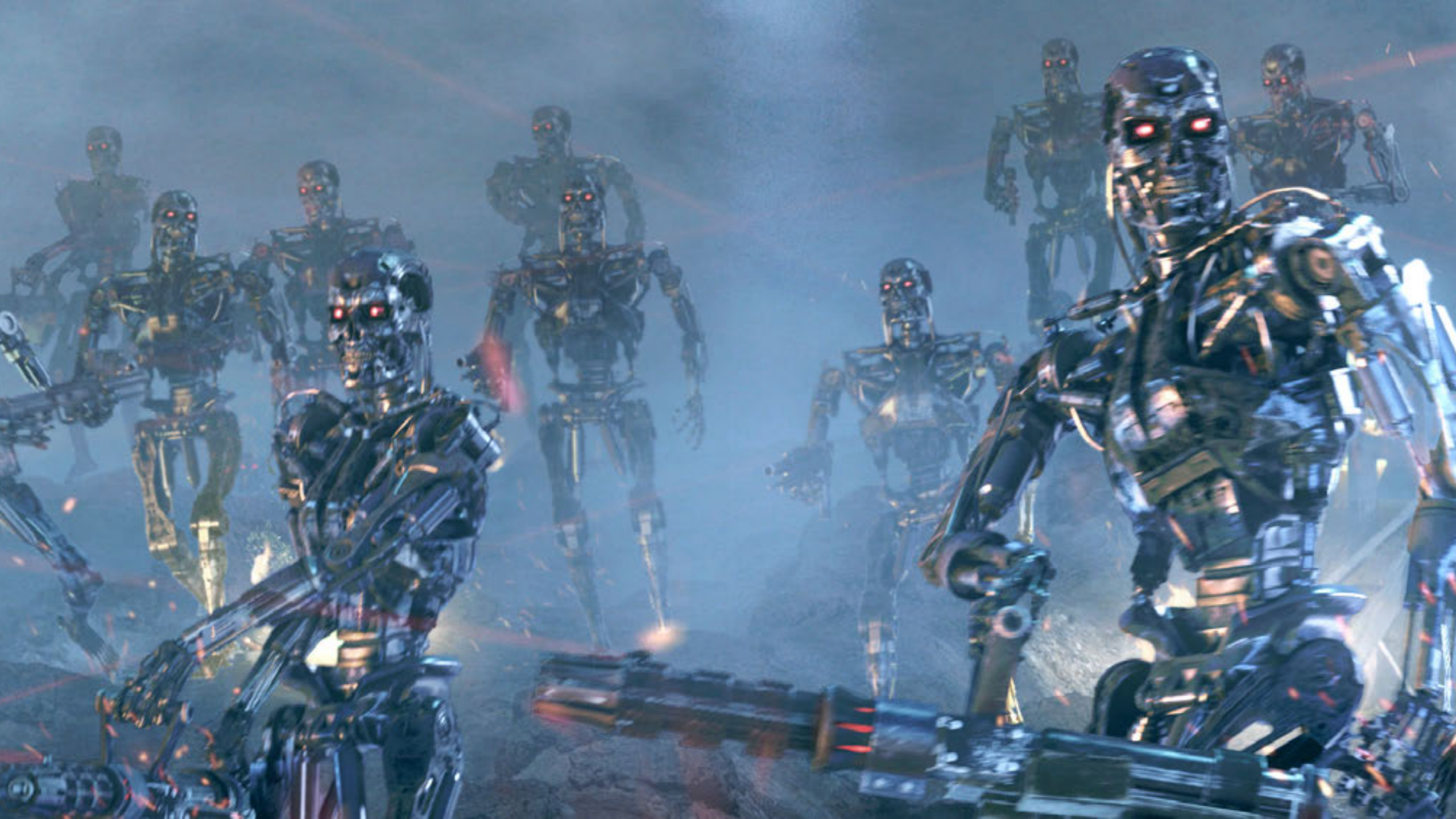
AI vs Machine Learning vs Deep Learning?

Demos

Challenges / what does the future hold?









# Machine Learning in Today's World

Retail - Amazon



Frequently bought together



Total price: £25.11

Add both to Basket

Customers who bought this item also bought



Transformers Robots in Disguise Power Surge Sideswipe and Wind Strike Toy - Red  
★★★★☆ 39  
£19.99 ✓prime



50 Polka Dot Twist Ties For Cone Party Bags Cello Cellophane Bags Assorted Colours  
★★★★☆ 18  
£2.45 ✓prime



Banana Boat Kids Ultramist Spray Sun Lotion SPF 50, 175ml  
★★★★☆ 43  
£7.72 ✓prime



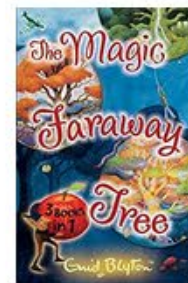
SainSmart Jr. Puzzle Ball Wisdom Ball 3D Intelligence Ball Game Magic Puzzle 21 Pcs  
★★★★☆ 47  
£9.99 ✓prime



Trutex Limited Boy's Short Sleeve Plain Polo Shirt  
★★★★☆ 137  
£1.24 - £9.95



The Wishing-Chair Collection: Three stories in one! (The Wishing-Chair... Enid Blyton  
★★★★☆ 177  
Paperback  
£6.99 ✓prime



The Magic Faraway Tree Collection: 3 Books in 1 Enid Blyton  
★★★★☆ 1,123  
Paperback  
£6.29 ✓prime



Violin Star 1, Student's book, with CD (Violin Star (ABRSM)) Edward Huws Jones  
★★★★☆ 118  
Paperback  
£5.59 ✓prime



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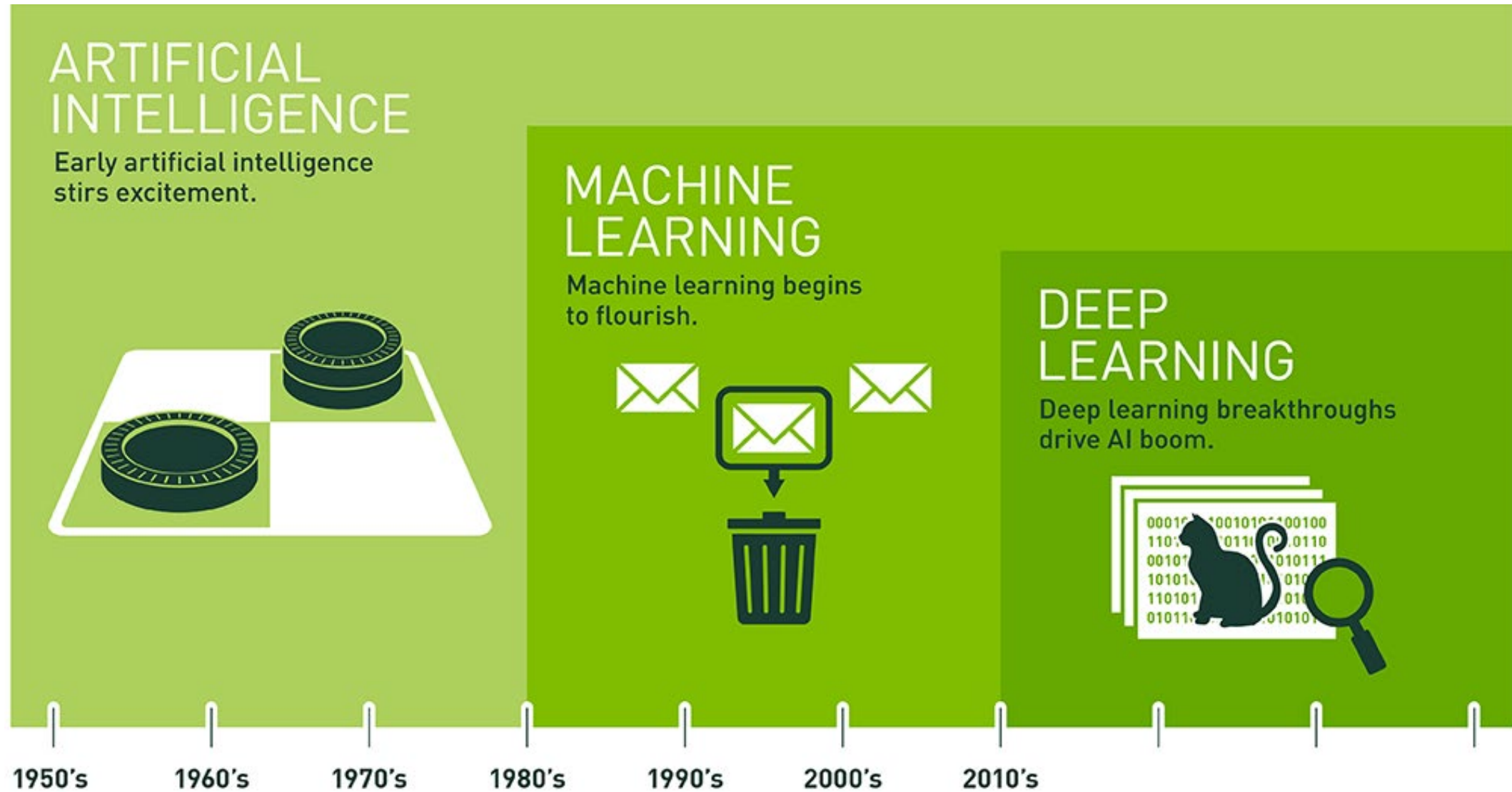


# Machine Learning in Today's World

- Credit Scoring
- Customer Segmentation
- Post Office Image Recognition



# AI vs Machine Learning vs Deep Learning



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<https://blogs.nvidia.com/blog/2016/07/29/whats-difference-artificial-intelligence-machine-learning-deep-learning-ai/>







# Training -> Testing -> Production Use

- Teach using examples

**TRAIN**

Teacher provides problem & answers

Student learns generic approach, not memorising answers

- Test using exams

**TEST**

Teacher knows answers, students don't

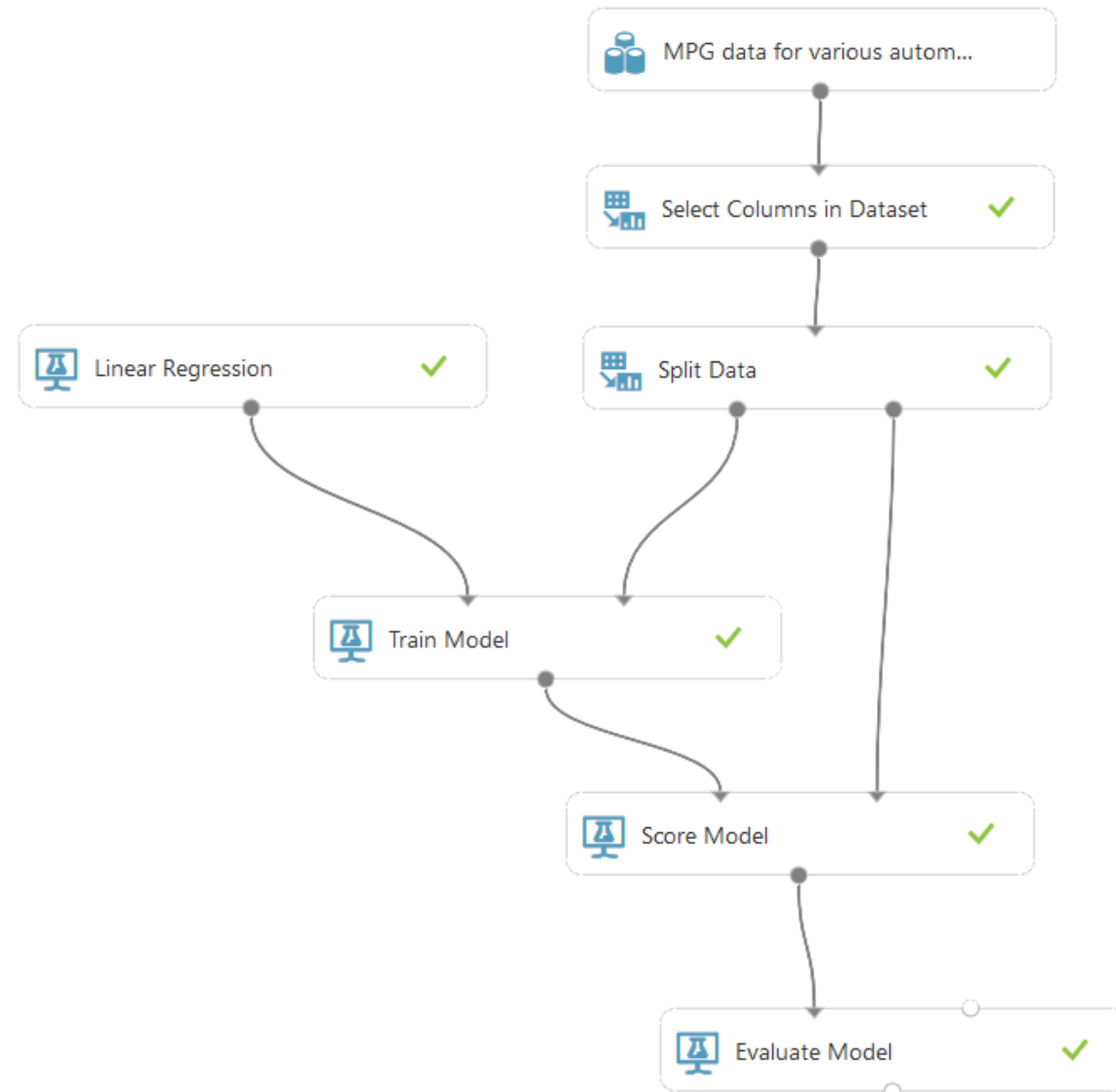
Score the results

- Best students go to university or get jobs

**PRODUCTION**



# Demo





# Resources

<https://studio.azureml.net>

Harrison Kinsley / @Sentdex

<https://www.youtube.com/user/sentdex>

<https://Gym.OpenAI.com>



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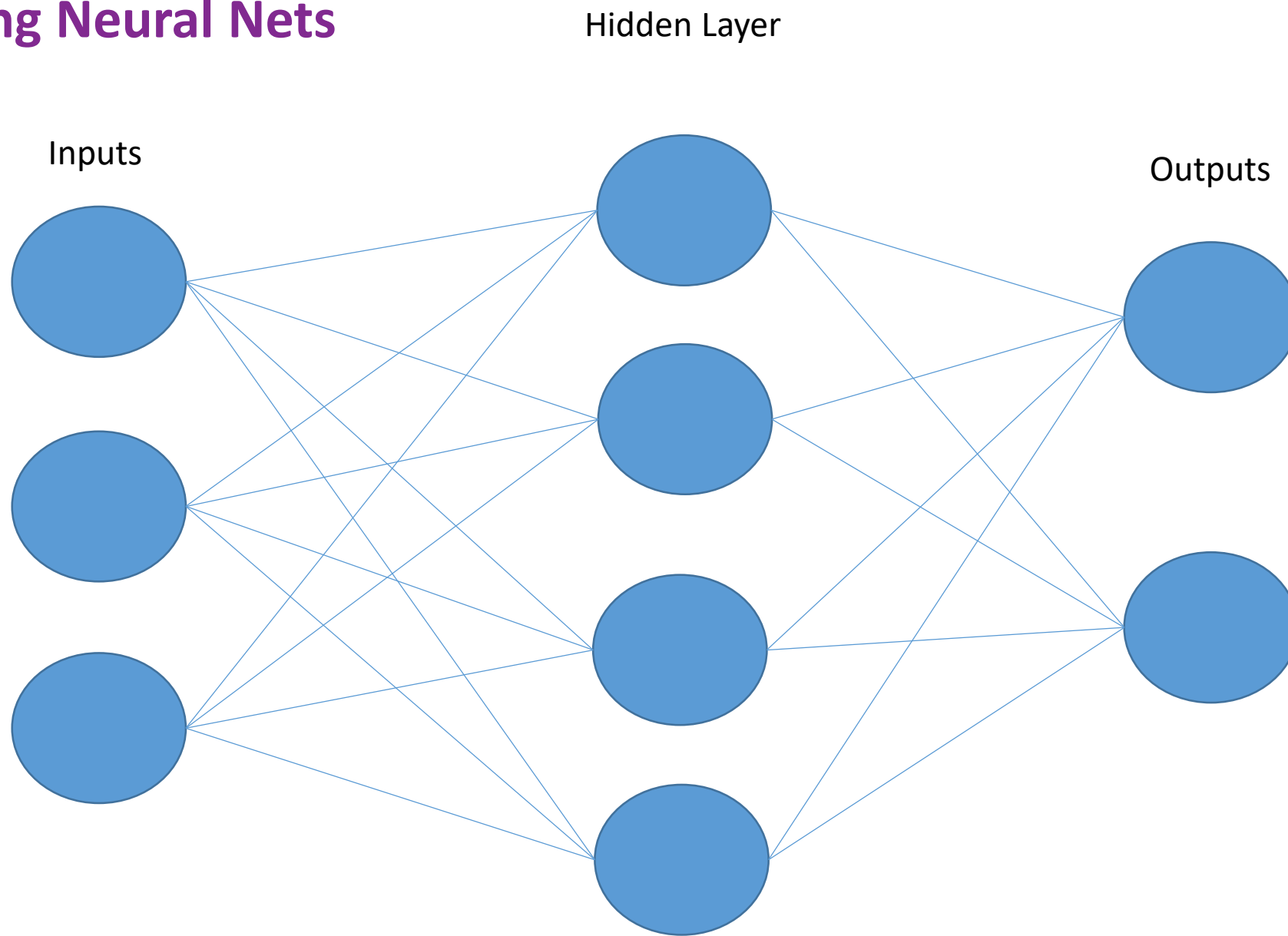




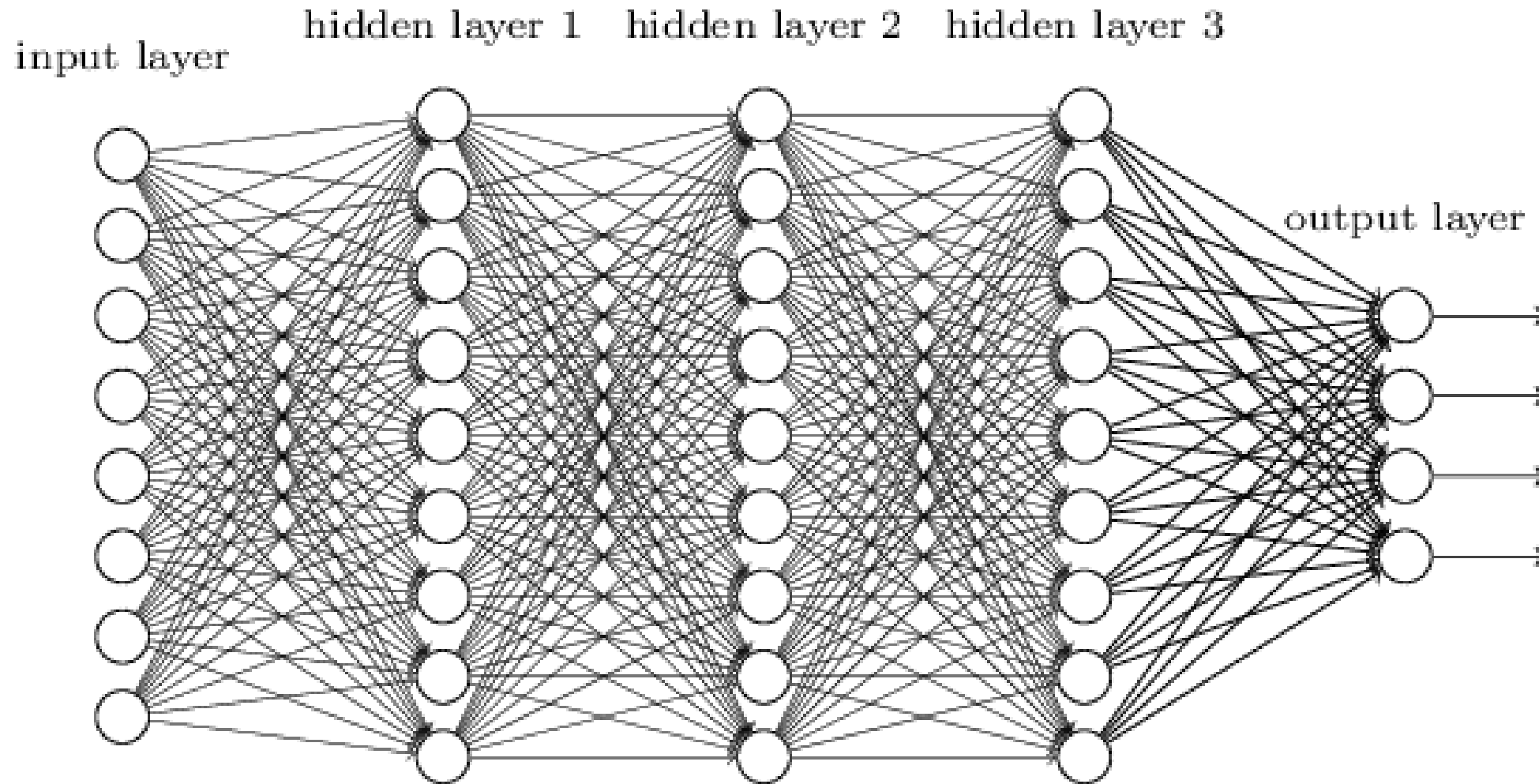




# Deep Learning Neural Nets



# Deep Learning Neural Nets





# Market summary > NVIDIA Corporation

NASDAQ: NVDA - Jan 11, 9:55 AM EST



224.73 USD ▲ 1.05 (0.47%)

1 day

5 day

1 month

3 months

1 year

5 years

max



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# Are We Doomed?

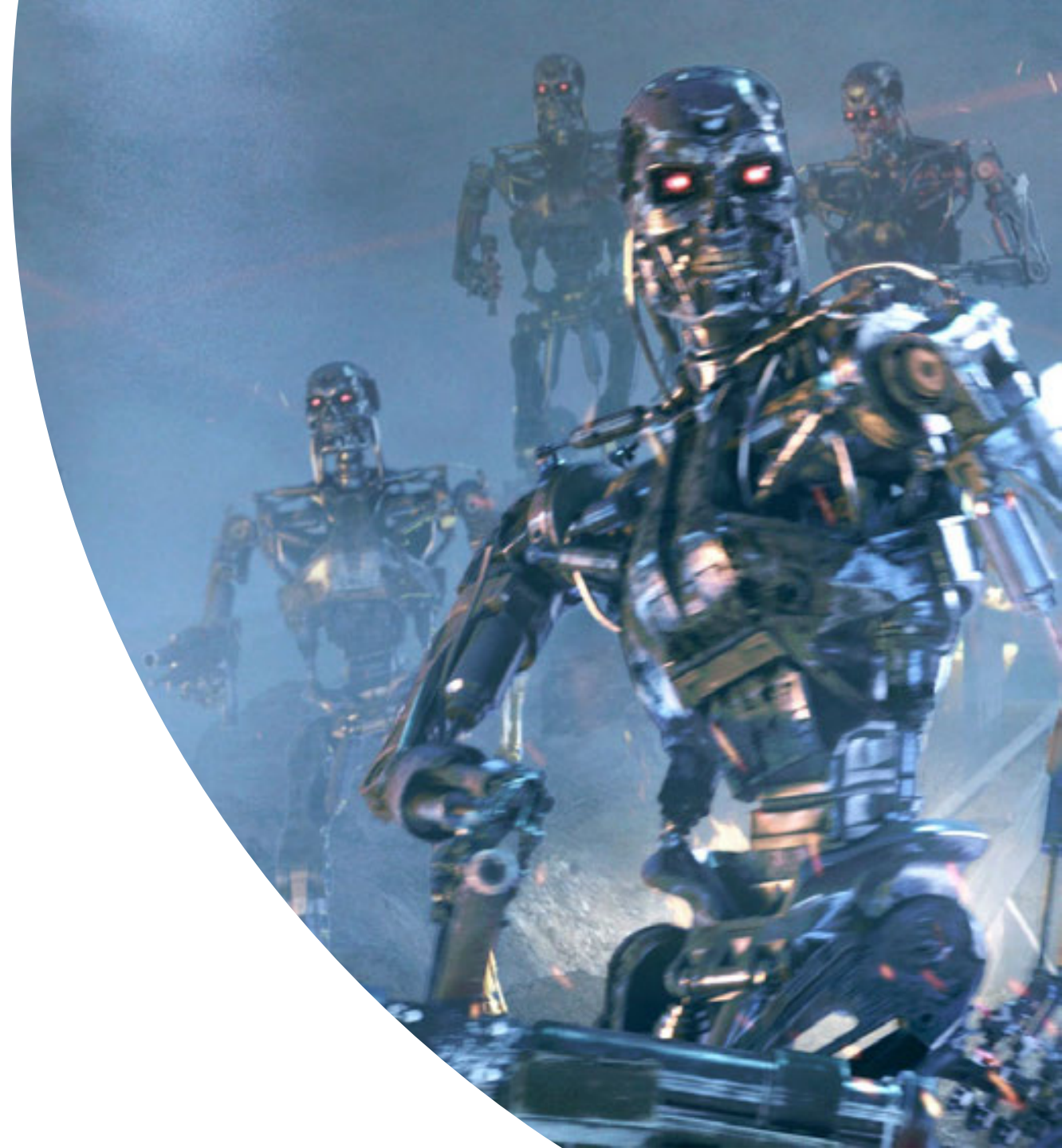
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Ethics

Control

Killing Machines

Replacing Jobs



Ethics

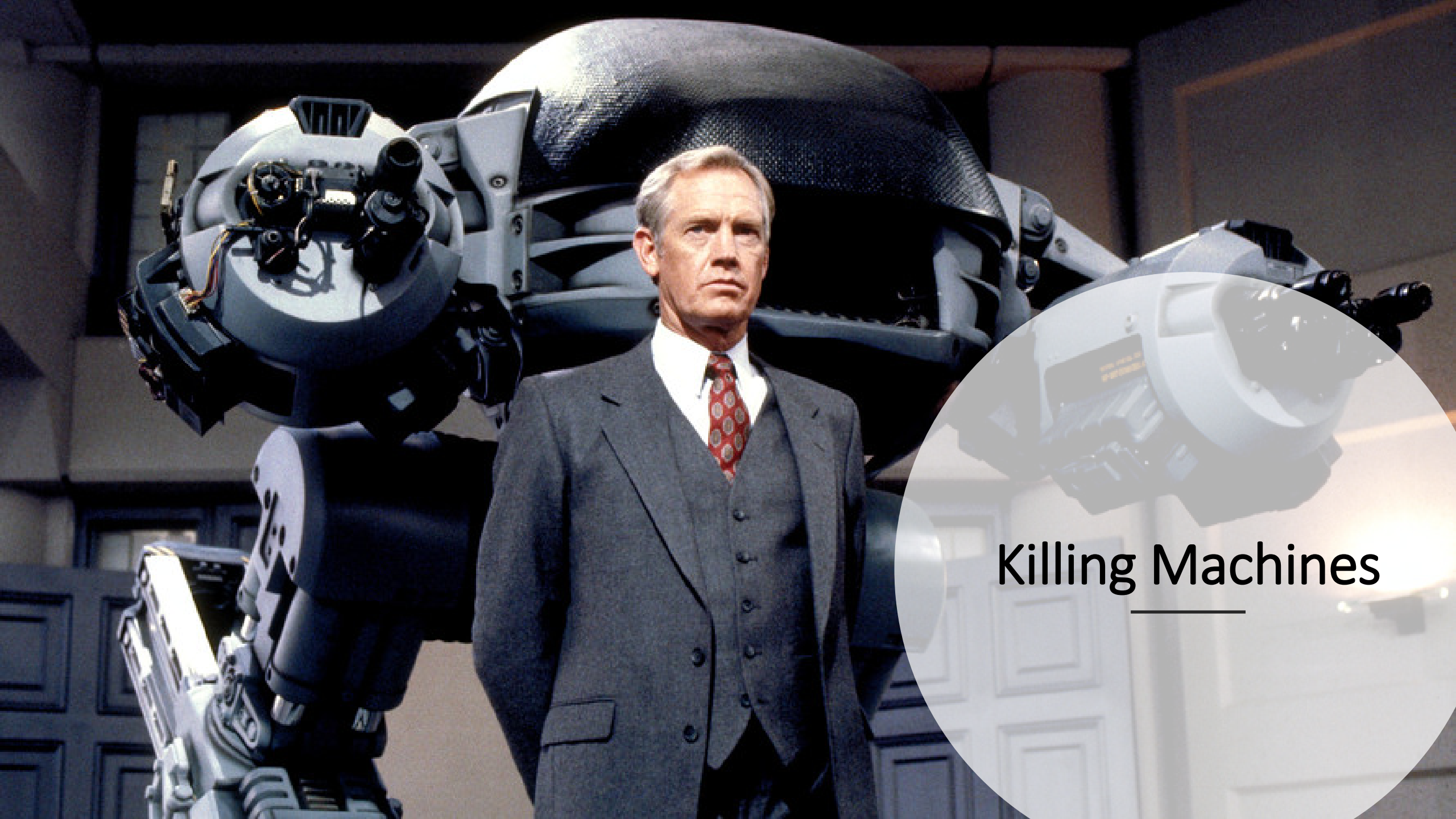
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# Control





# Killing Machines

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Xinhua

Can you spot the difference?

Can you spot the difference?

<https://www.youtube.com/watch?v=Hg-h5KporSk>



@PurpleFrogAlex



www.purplefrogsystems.com







Unemployment

# So what's this Machine Learning all about?



# Questions?

[Alex@PurpleFrogSystems.com](mailto:Alex@PurpleFrogSystems.com)

[PurpleFrogSystems.com](http://PurpleFrogSystems.com)

[PurpleFrogSystems.com/blog](http://PurpleFrogSystems.com/blog)

[@PurpleFrogAlex](https://twitter.com/PurpleFrogAlex)



@PurpleFrogAlex



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