Deep Learning & Applied Al

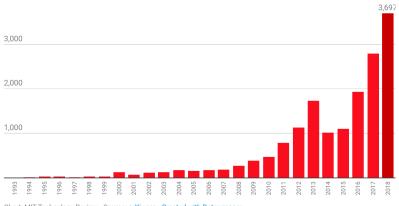
Conclusions

Emanuele Rodolà rodola@di.uniroma1.it



Where is AI headed

From the artificial intelligence section in arXiv:

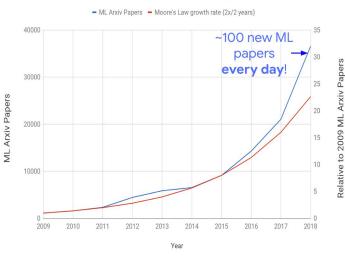


 $\textbf{Chart: MIT Technology Review \bullet Source: arXiv.org \bullet Created with Datawrapper}$

Reinforcement learning is gaining momentum.

Source: MIT Technology Review, link

Machine Learning Arxiv Papers per Year



Source: P. Fournier-Viger, link

• Major innovations or breakthroughs are few.

- Major innovations or breakthroughs are few.
- Most works are incremental advances.

- Major innovations or breakthroughs are few.
- Most works are incremental advances.
- Some criteria: # citations, reputation of conference/journal, authors, and affiliation.

- Major innovations or breakthroughs are few.
- Most works are incremental advances.
- Some criteria: # citations, reputation of conference/journal, authors, and affiliation.
- ML is very successful in computer vision and NLP.
 Dozens of other areas can benefit from AI: explore those!

- Major innovations or breakthroughs are few.
- Most works are incremental advances.
- Some criteria: # citations, reputation of conference/journal, authors, and affiliation.
- ML is very successful in computer vision and NLP.
 Dozens of other areas can benefit from AI: explore those!
- Deep learning can not solve everything.

• Reinforcement learning (link)

- Reinforcement learning (link)
- Causality (<u>link</u>)

- Reinforcement learning (link)
- Causality (<u>link</u>)
- Attention (link)

- Reinforcement learning (link)
- Causality (<u>link</u>)
- Attention (link)
- Interpretability (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (<u>link</u>)
- Visualization (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (<u>link</u>)
- Visualization (<u>link</u>)
- Point clouds (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (link)
- Interpretability (<u>link</u>)
- Distributed training (link)
- Visualization (<u>link</u>)
- Point clouds (<u>link</u>)
- Fairness (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (<u>link</u>)
- Visualization (<u>link</u>)
- Point clouds (<u>link</u>)
- Fairness (<u>link</u>)
- Network quantization (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (<u>link</u>)
- Visualization (<u>link</u>)
- Point clouds (<u>link</u>)
- Fairness (<u>link</u>)
- Network quantization (<u>link</u>)
- Stability and properties of the loss surface (<u>link</u>)

- Reinforcement learning (<u>link</u>)
- Causality (<u>link</u>)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (<u>link</u>)
- Visualization (<u>link</u>)
- Point clouds (<u>link</u>)
- Fairness (link)
- Network quantization (<u>link</u>)
- Stability and properties of the loss surface (<u>link</u>)
- . . .

- Reinforcement learning (<u>link</u>)
- Causality (link)
- Attention (<u>link</u>)
- Interpretability (<u>link</u>)
- Distributed training (link)
- Visualization (<u>link</u>)
- Point clouds (<u>link</u>)
- Fairness (link)
- Network quantization (<u>link</u>)
- Stability and properties of the loss surface (<u>link</u>)
-

Keep checking the website for exam-related information. Contact me to agree on a final project.