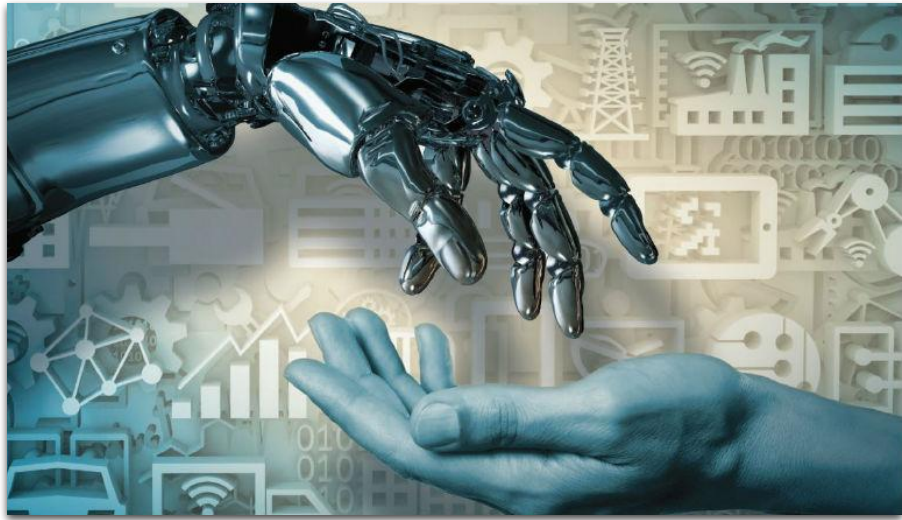


Redefining What Defines Humanity

Yash Moondhra
CS 35L

Modern Technology



- Moore's Law is one example of the astonishing rate of developments in technology
- Pathogen Testing
- Bidirectional Encoder Representations from Transformers (BERT)

“Shall I Compare Thee to a Machine–Written Sonnet?”

- Duke Data Science team creates a sonnet-generating algorithm
- A Shakespearean sonnet is a poem with fourteen lines of a certain rhyme scheme and iambic pentameter
- PoetiX Literary Turing Test Award
- Duke Data Science team was not experienced



Duke's Sonnet-Generating Algorithm

To more than all *line 1*

And is to ability *line 2*

Than begins to crawl *line 3*

.

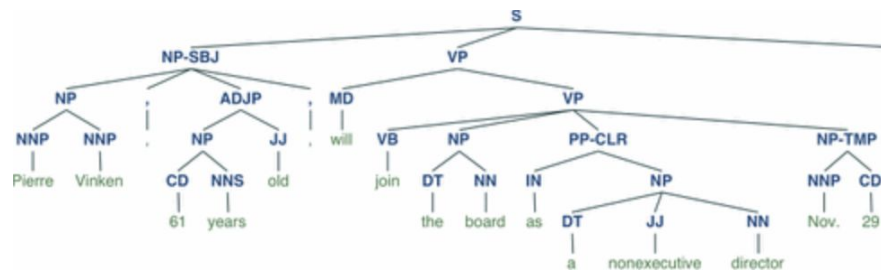
.

.

And of his name *line 14*

Why Duke Won

- Novel Features
- Python NLP → Pronouns (e.g. “he she”)
- Machine Learning
- Renowned written works



Obstacles and Benefits

- Computer does not understand the actual meaning of words
- Consequence: Poetry without a purpose
- Benefit: Other languages
- Benefit: Consistently correct rhythm and meter
- Benefit: Outputs poetry at an extremely fast rate

Current Definition of Humanity

“**Humanity** is the human race, which includes everyone on Earth. It’s also a word for the qualities that make us human, such as the ability to love and have compassion, be creative, and not be a robot or alien.”

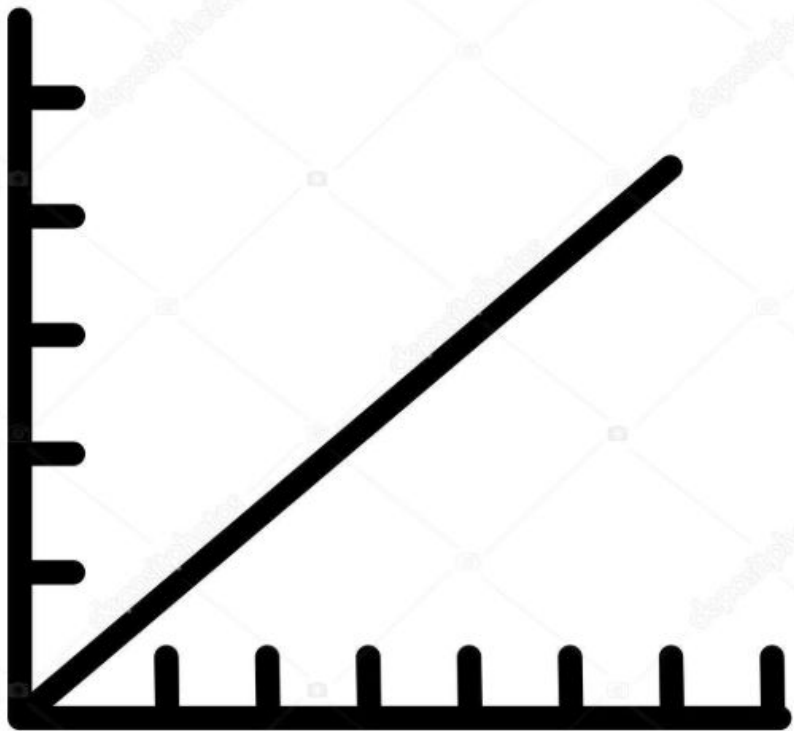
– *Vocabulary.com*

Modern Art Created by Artificial Intelligence



- Duke Data Science team
- Portrait of Edmond de Belamy sold in New York for over \$400,000, demonstrating the value people have for these products
- “AICAN is an AI artist that 75% of people think is real” – Ahmed Elgammal ([Link](#))

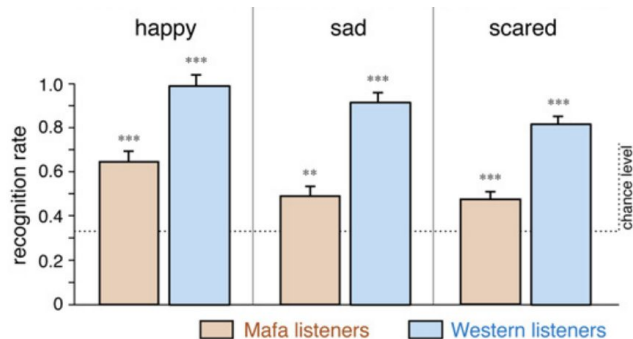
Can Computers Make Better Art Than Humans?



- Assist artists → create meaningless art → create meaningful art
- Expanding into all areas of art
- “For a robot to really make art, it would need an autonomous mind that was emotional as well as rational.” – Jonathan Jones

Machine Learning Paired with Art

- Ed Sheeran's Four Chord Theory
- Much of machine learning consists of finding patterns
- Consequences on the art industry
 - Can machines replace actual artists?
 - Broaden our understanding of art
 - General trend of computers helping us learn about the world around us



Bibliography

1. Benhart, John, et al. "Shall I Compare Thee to a Machine-Written Sonnet? An Approach to Algorithmic Sonnet Generation." arXiv preprint arXiv:1811.05067 (2018).
 - a. <https://arxiv.org/pdf/1811.05067.pdf>
2. Fritz, Thomas, et al. "Universal recognition of three basic emotions in music." *Current biology* 19.7 (2009): 573-576.
 - a. https://ac.els-cdn.com/S0960982209008136/1-s2.0-S0960982209008136-main.pdf?_tid=da748e19-a6b4-41ce-8773-1656aca993de&acdnat=1552176272_bc68267128555d79fc733a6d6c7b243e
3. Guo, Brian. "Scientific Sonnets: Duke Team Wins Competition For Poetry-Generating Algorithm". *The Chronicle*, 2019,
<https://www.dukechronicle.com/article/2018/12/scientific-sonnets-duke-team-wins-competition-for-poetry-generating-algorithm>
4. Jones, Jonathan. "A Portrait Created By AI Just Sold For \$432,000. But Is It Really Art?". *The Guardian*, 2019,
 - a. <https://www.theguardian.com/artanddesign/shortcuts/2018/oct/26/call-that-art-can-a-computer-be-a-painter>.
5. <https://www.vocabulary.com/dictionary/humanity>
6. <https://www.fastcompany.com/90253470/75-of-people-think-this-ai-artist-is-human>