Disclaimer #1:

The views expressed herein are those of the authors and should not be attributed to the International Monetary Fund, its Executive Board, or its management.
Neural Networks

Neural networks are behind the most impressive and medialized successes of machine learning in recent years...

Examples:

- language translation (e.g. Google translate) progress
- image/object recognition (self-driving cars, radiology, tumor scans, etc.)
- speech recognition and translation
- reinforcement learning advances (playing Go, ...)
- ...
Neural Networks

Dog: 94%
Cat: 31%
Bird: 2%
Boat: 0%

Dog: 37%
Cat: 91%
Bird: 21%
Boat: 1%
Neural Networks
Neural Networks
Style Transfer
Style Transfer
Neural Networks

\[ x + 0.007 \times \text{sign}(\nabla_x J(\theta, x, y)) = x + \epsilon \text{sign}(\nabla_x J(\theta, x, y)) \]

- "panda" 57.7% confidence
- "nematode" 8.2% confidence
- "gibbon" 99.3% confidence
Neural Networks
Deep Fakes
Neural Networks