

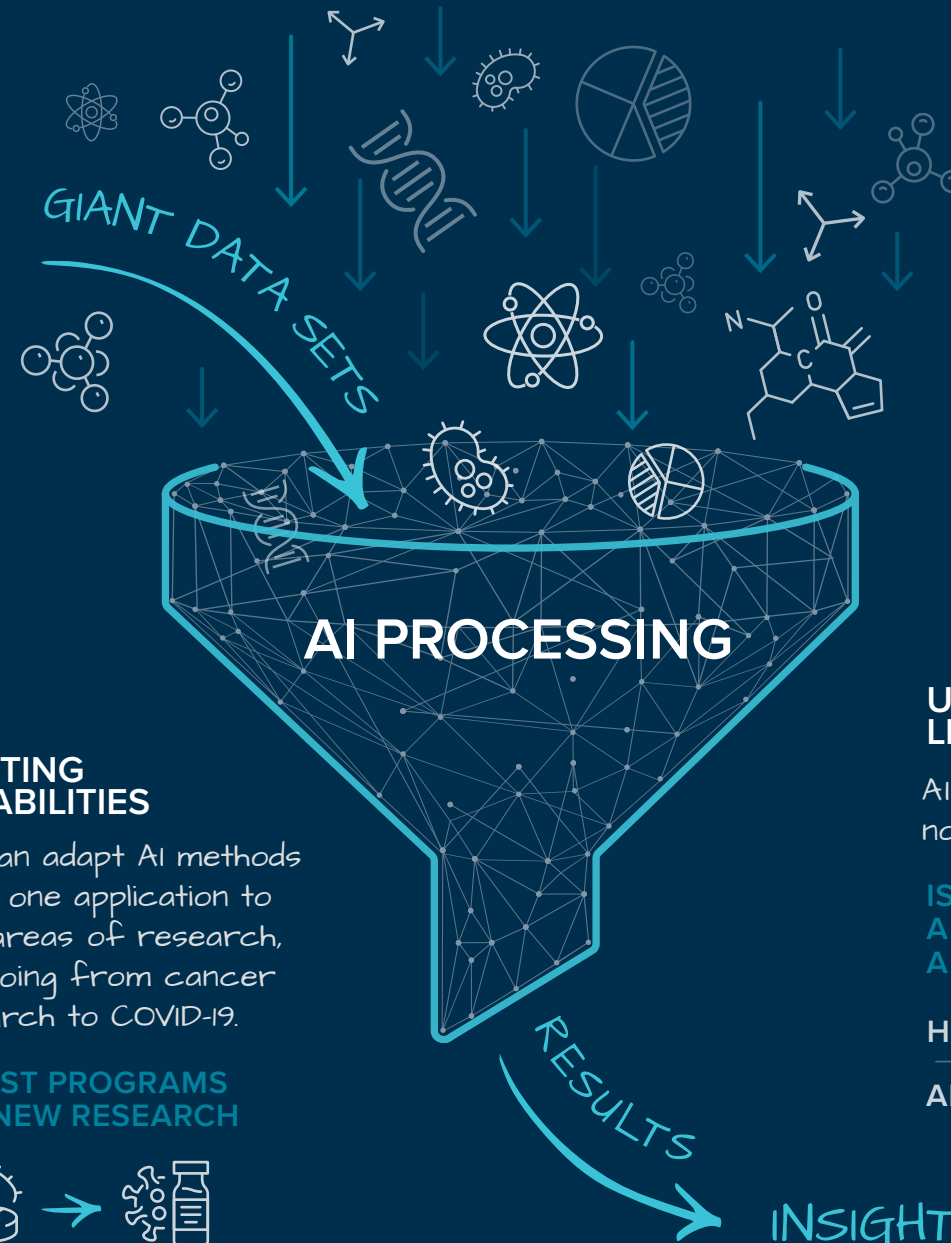
WHAT IS ARTIFICIAL INTELLIGENCE?

Analyzing large complex data to perform human tasks at computer speeds

Artificial intelligence (AI) is now a part of our daily lives, helping to simplify basic tasks, such as voice recognition, content recommendations or photo searches based on people or objects they contain. Scientists are using AI in similar ways to advance our understanding of the world around us. It can help them analyze mountains of data faster, and has provided better solutions. Different AI techniques are used in many research areas, from materials science and medicine to climate change and the cosmos.

For example, we can train AI to recognize complex patterns by viewing many different examples. Researchers can use this capability to find new and improved materials for things like solar cells or medicine by training AI on all the known materials for that application. Then AI can help researchers zero in on other promising materials that can be fabricated and tested in a laboratory.

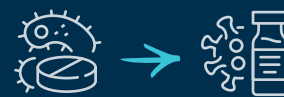
Learn more at www.anl.gov.



PIVOTING CAPABILITIES

We can adapt AI methods from one application to new areas of research, like going from cancer research to COVID-19.

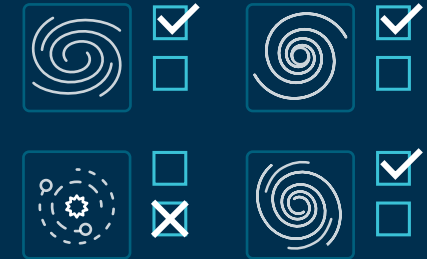
ADJUST PROGRAMS FOR NEW RESEARCH



AI IS FLEXIBLE.

PATTERN RECOGNITION

IS THIS A GALAXY?



AI IS FAST!

Trained to recognize patterns, AI can sift through thousands of images to identify and label content, like types of galaxies.

UNDERSTANDING THE LIMITATIONS OF AI

AI ISN'T PERFECT.

AI can be fooled if the input data goes outside of normal patterns, like putting a cat in a shark costume.

IS THIS A CAT OR A DOG?



HUMAN	DOG	CAT	CAT
AI	DOG	CAT	? ??

INSIGHTS TO DRIVE DISCOVERY

