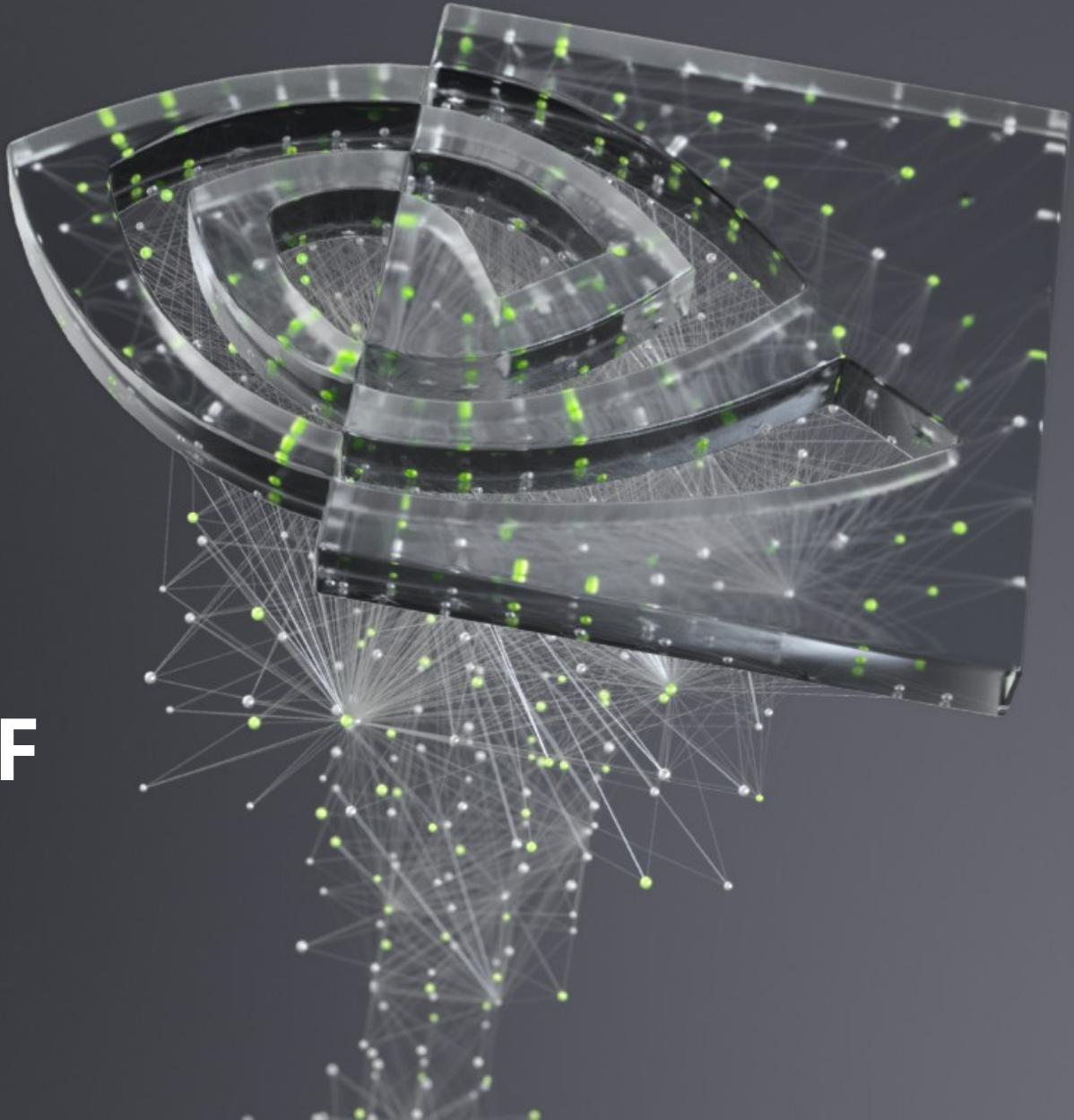




DEEP
LEARNING
INSTITUTE

FUNDAMENTALS OF DEEP LEARNING

Part 5: Pre-trained Models



AGENDA

Part 1: An Introduction to Deep Learning

Part 2: How a Neural Network Trains

Part 3: Convolutional Neural Networks

Part 4: Data Augmentation and Deployment

Part 5: Pre-trained Models

Part 6: Advanced Architectures

AGENDA – PART 5

- Review so far
- Pre-trained Models
- Transfer Learning



REVIEW SO FAR

REVIEW SO FAR



- Learning Rate
- Number of Layers
- Neurons per Layer
- Activation Functions
- Dropout
- Data



PRE-TRAINED MODELS

PRE-TRAINED MODELS

TensorFlow Hub



K Keras

PYTORCH
HUB

PRE-TRAINED MODELS

VERY DEEP CONVOLUTIONAL NETWORKS FOR LARGE-SCALE IMAGE RECOGNITION

Karen Simonyan* & **Andrew Zisserman⁺**

Visual Geometry Group, Department of Engineering Science, University of Oxford
`{karen,az}@robots.ox.ac.uk`



THE NEXT CHALLENGE

An Automated Doggy Door





TRANSFER LEARNING

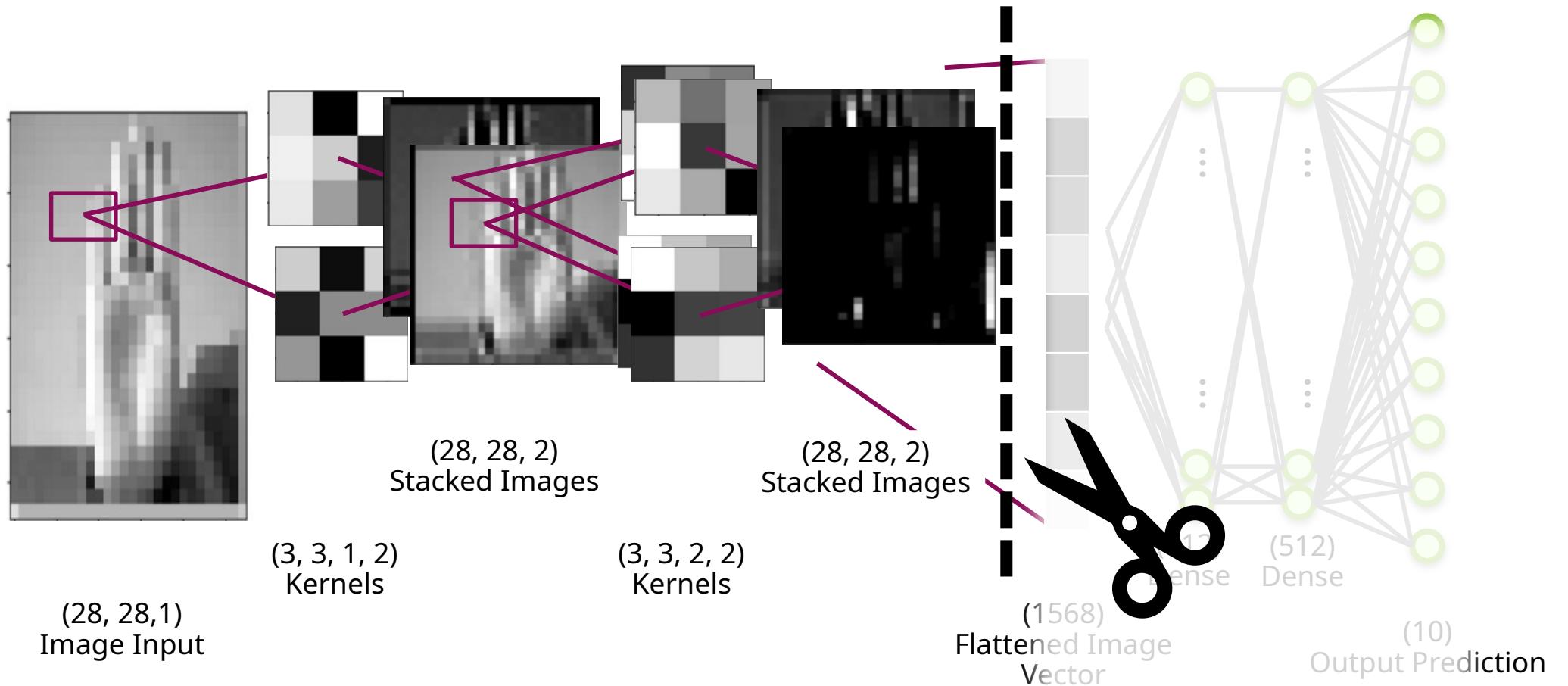
THE CHALLENGE AFTER An Automated Presidential Doggy Door



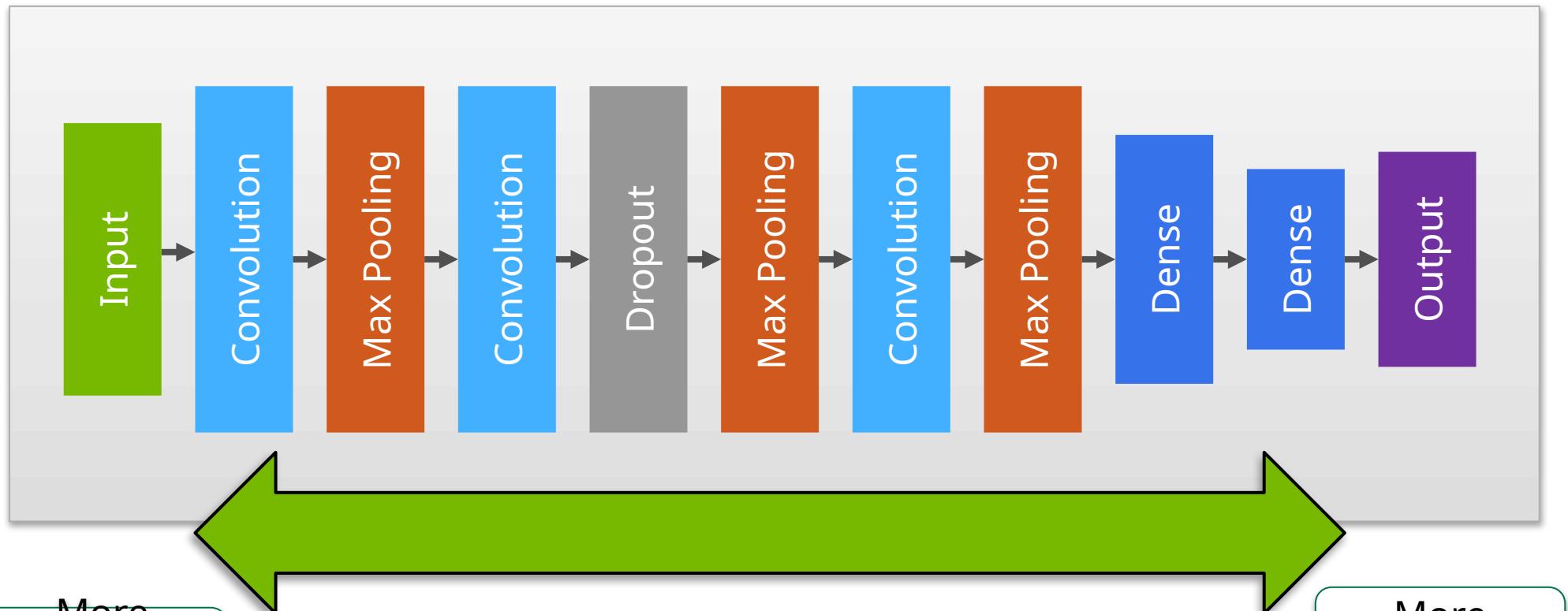
TRANSFER LEARNING



TRANSFER LEARNING



TRANSFER LEARNING



More
Generalized

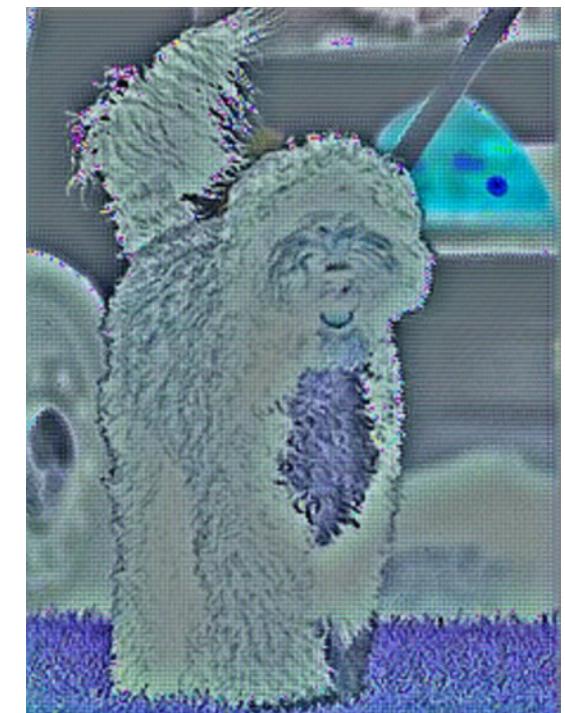
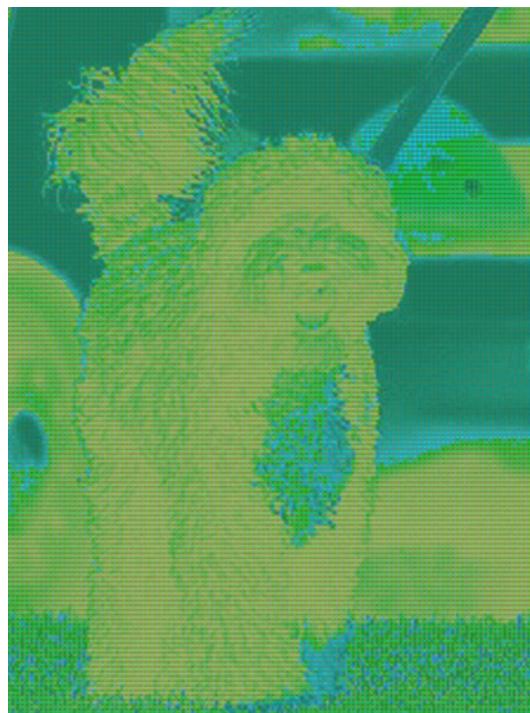
More
Specialized

TRANSFER LEARNING

Freezing the Model?

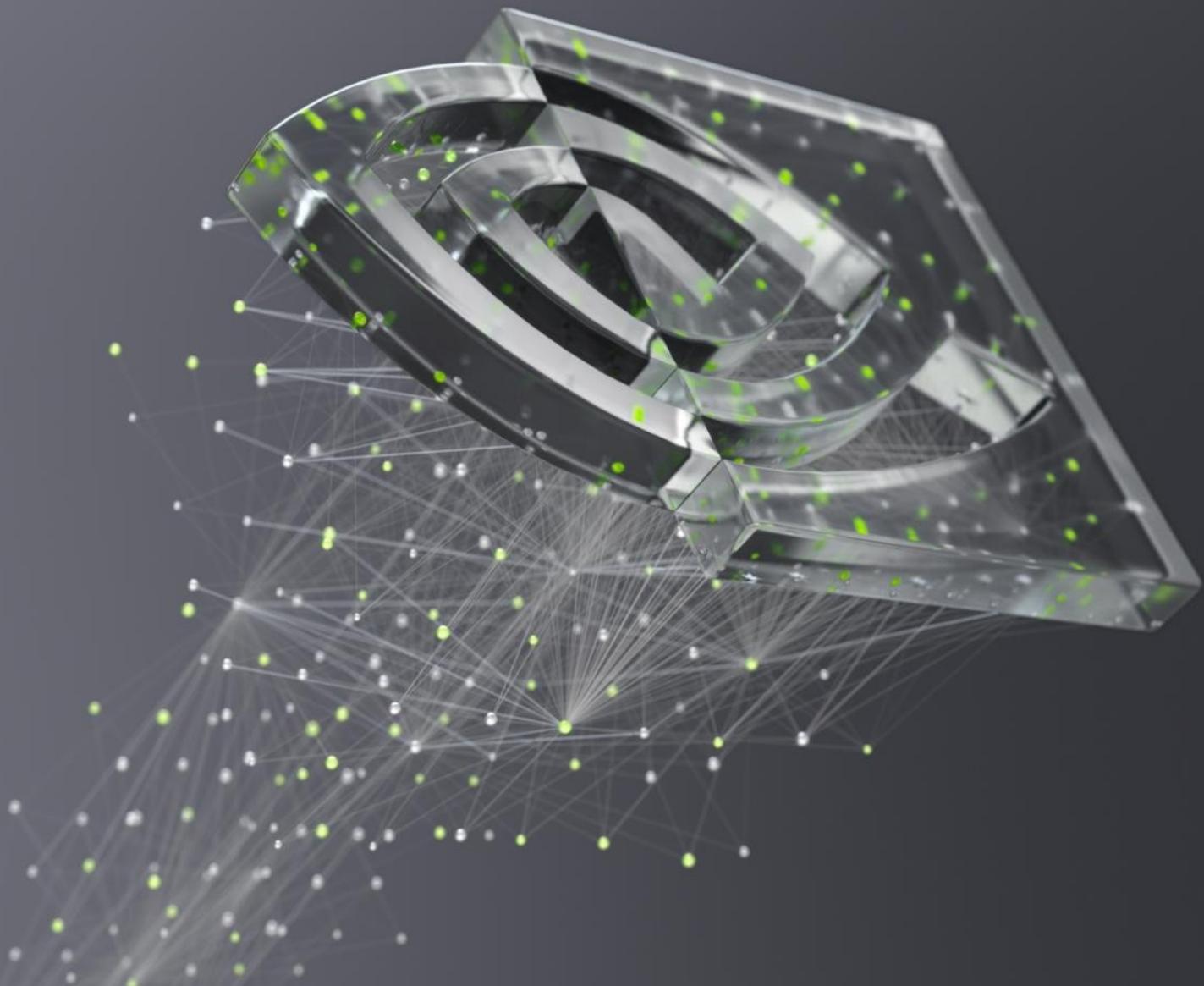


TRANSFER LEARNING



The background of the slide features a complex network graph. It consists of numerous small, semi-transparent white and light green circular nodes scattered across a dark gray background. These nodes are interconnected by a dense web of thin, light gray lines representing edges. Some clusters of nodes are more densely packed than others, creating a sense of organic connectivity.

LET'S GET STARTED!



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