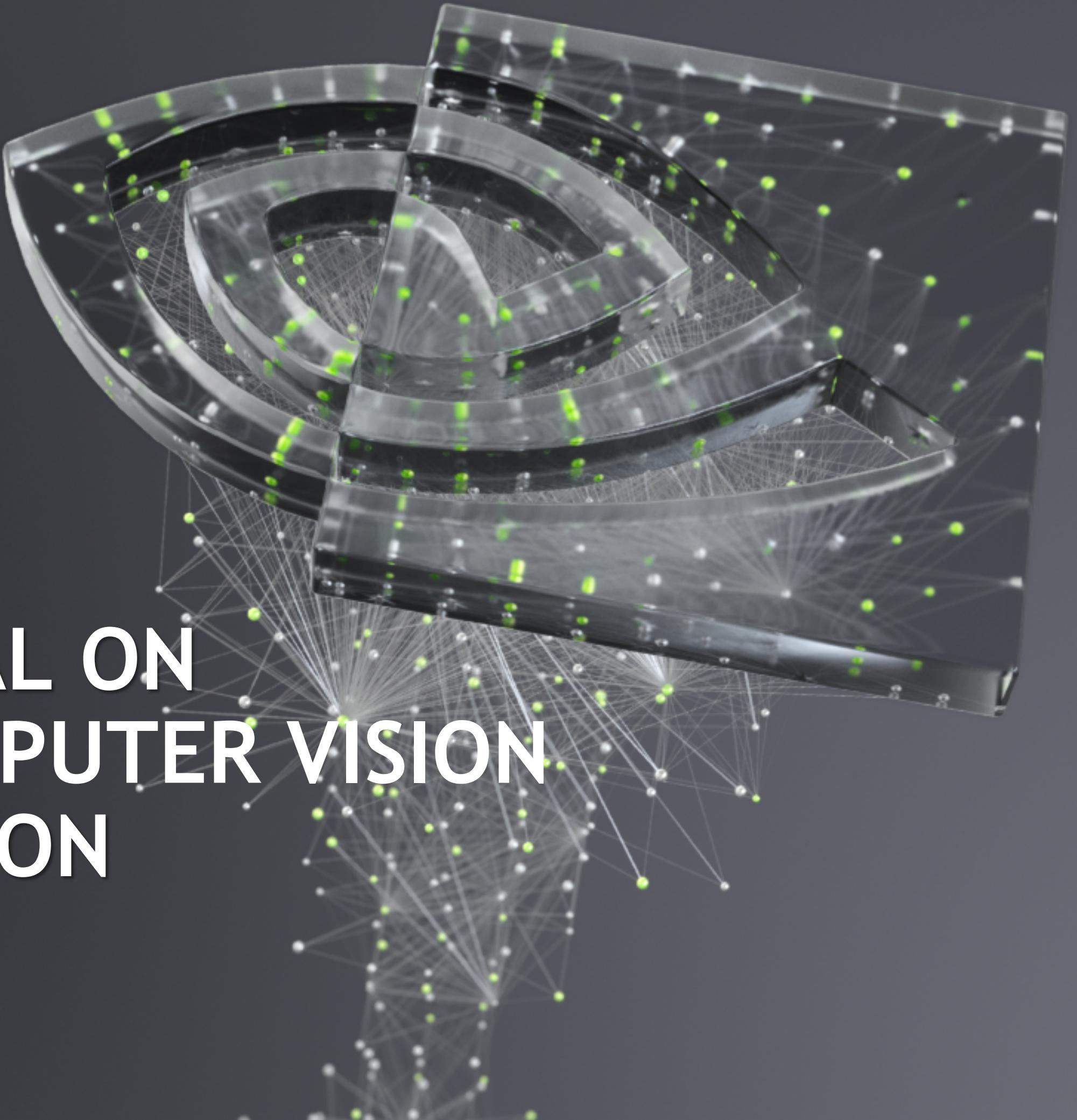




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# ECCV 2020 TUTORIAL ON ACCELERATING COMPUTER VISION WITH MIXED PRECISION

Arun Mallya, 23 August 2020

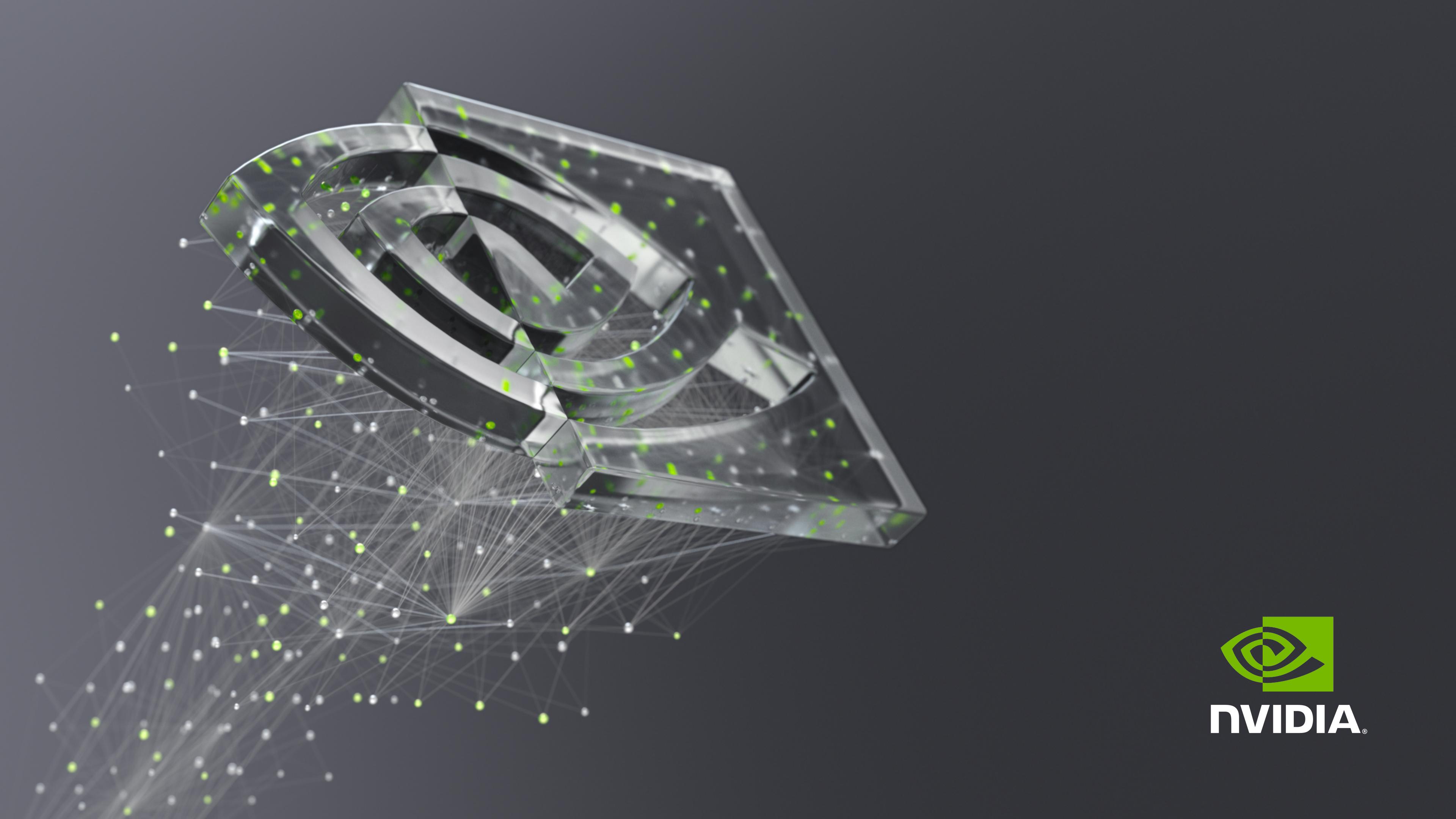


# WHY IS THIS TUTORIAL USEFUL FOR ME?

- New levels of accuracy are being obtained by using larger networks and larger datasets
- Training of models remains a bottleneck - need fast turn-around times while iterating on the design of models
- Reduced / Mixed precision training can help speed up training without loss of accuracy
  - Faster arithmetic computation
  - Lower memory requirements - larger batch size
- This tutorial teaches you how to use mixed precision training in your experiments

# TUTORIAL ORGANIZATION

- 3 sections - Basics and Fundamentals, Code Optimization Tricks, Application Case Studies
- **Basics and Fundamentals**
  - Introduction to NVIDIA Tensor Cores (NVIDIA A100 GPUs and TensorFloat-32)
  - Introduction to Mixed Precision training and the AMP library
  - Accuracy and Performance Considerations
- **Code Optimization Tricks**
  - Simple techniques to improve training performance in PyTorch
- **Application Case Studies**
  - Examples of application of AMP to research produced at NVIDIA
  - GANs, 3D CNNs, LSTM, etc.



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