This workshop explores how convolutional and recurrent neural networks can be combined to generate effective descriptions of content within images and video clips.

Upon completion, you’ll be able to solve deep learning problems that require multiple types of data inputs.
AGENDA

08:45am – 09:00am: Registration
09:00am – 11:00am: Part 1: Image Segmentation with TensorFlow
  Introduction
  Lab structure
  Image Segmentation
  Tensorflow
  Hands-on
11:00am – 11:15am: Break
11:15am – 1:15pm: Part 2: Word Generation with TensorFlow
  Lab structure
  Recurrent Neural Network
  One-hot Encoding
  Hands-on
1:15pm – 2:15pm: Lunch
2:15pm – 4:15pm: Part 3: Image and Video Captioning by Combining CNNs and RNNs
  Lab structure
  Image Captioning
  Video Captioning
4:15pm – 4:30pm: Next Steps
  Discussion
  Workshop survey

WHAT YOU WILL LEARN

This course aims at the following learning targets:
• Introduce TensorFlow
• Compare Computer Vision Workflows
• Introduce Natural Language Processing
• Highlight the value of mid-network information
• Increase the diversity of solvable problems with Deep Learning

PREREQUISITES

✓ Personal Laptop
✓ Familiarity with basic Python (functions and variables)
✓ Understanding of fundamentals of convolutional neural networks for computer vision (e.g. see material here or here)
✓ Prior experience training neural networks (in any framework, e.g. see this simple example in keras)

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