Report of FDP on Computer Vision & its Applications

The FDP was inaugurated by Dr. Jyothisha J Nair on 10/4/2019.

Session 1: 10/4/2019 (10.20 AM - 12.30 PM)

Topic: Deep learning in Computer Vision

Resource Person: Dr. Jyothisha J Nair, Associate Professor, Dept of CSE, Amrita School of Engineering, Kollam.

The session started with an introduction to computer vision. The various methods for acquiring, processing and analyzing of images were discussed. This was followed by an introduction to deep learning. The importance and need for applying deep learning techniques in computer vision was discussed. The session also discussed about some of the common computer vision applications implemented using deep learning techniques.

Session 2: 10/4/2019 (1.30 PM - 4.00 PM)

Topic: Deep learning architectures for Computer Vision

Resource Person: Mrs. Vinitha Panicker J, Assistant Professor & Research Scholar, Dept of CSE, Amrita School of Engineering, Kollam.

The session started with a discussion on basics of neural networks and the importance of neural network architectures in computer vision. Deep neural networks have greater capabilities for image pattern recognition and are widely used in computer vision algorithms. Convolutional neural network is a class of DNN which is most commonly applied to analyzing visual imagery. CNN architecture and its working was covered in detail. Various CNN based architectures like AlexNet, GoogleNet, VGGNet, ResNet etc were also discussed.

Session 3: 11/4/2019 (9.30 AM - 12.30 PM)

Topic: Python in Computer Vision

Resource Person: Mr. Binu Jose, Assistant Professor, Dept of CSE, MBCET, Trivandrum

This was a hands-on session which started with a discussion on the basics of Python programming language. Later the various features in Python that helps to implement computer vision applications were also discussed.

Session 4: 11/4/2019 (1.30 PM - 4.00 PM)

Topic: Image Processing Application in Deep learning

Resource Person: Dr. Tessy Mathew, Associate Professor Dept CSE, MBCET, Trivandrum

The session started with a discussion on deep learning in the area of computer vision. It was mentioned that deep learning models, with their multi-level structures, are very helpful in extracting complicated information from input images. The session discussed about how deep learning is used in image classification, data labelling and various other image processing applications. The session concluded with the discussion on using region-based convolution neural network for finding locations of objects in an image with ease. Some real world examples were also shown.

Session 5: 12/4/2019 (9.30 AM - 12.30 PM)

Topic: Generative Adversarial Network and its Applications

Resource Person: Dr. Soumya T, Assistant Professor, Dept of CSE, CE, Perumon

The session started with discussion on the importance of using Generative Adversarial Network. Here two deep learning models which compete with each other, are trained simultaneously. One model that tries to generate new instances or examples is called as the generator. The other model that tries to classify if a particular instance originates from the training data or from the generator is called as the discriminator. Image generation is the most prominent area of computer vision where GANs are used. Some of the real world applications were also discussed.

The three-day FDP concluded with the valedictory function where certificates were handed over to participants.