



Centurion University of TEchnology & Management, PKD

Webinar on

Image Processing to Computer Vision

Date: 10th August 2020

Resource Person:

Dr. Jharna Majumdar

SCIENTIST-G, Head, Aerial Image Exploitation Division

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Co-ordinator:

Dr. Sujata Chakravarty

Professor & Head

Department of Computer Science and Engineering

No. of Participants: 171

Dr. Jharna Majumdar is currently the Dean R & D, Prof. Dept of M Tech Comp Sc & Engg. and Head of two Research Centre of NMIT, Centre for Robotics Research and Centre for Space research at the Nitte Meenakshi Institute of Technology, Bangalore, India.

About the Session:

This session gives about the Image Processing Technologies and Computer Vision with the multidisciplinary research in robotics and application areas. This session mainly focuses on bringing together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Image Processing Technologies and Computer Vision. It is an interdisciplinary platform for research scholars to present and discuss the most recent innovations, trends, practical challenges encountered and solutions adopted in the fields of Image Processing Technologies and Computer Vision. This session also provides advanced concepts like motion estimation and tracking, image classification, scene understanding, object classification and tracking, image fusion, and image registration, etc.

Objectives:

- To introduce image processing on computer vision
- To introduce multidisciplinary research applications in robotics
- To understand the tracking

Outcome:

- It could be utilized for tracking the single/multiple targets, health information system, uses the embedded hardware board for tracking etc.

Photographs of the event:

Multidisciplinary Research in Robotics & Application Areas

- Multidisciplinary Research in Robotics and Allied Areas
- Research work is Executed on the Funded Projects from reputed Funding Agencies like DRDO, DST, VTU, IEDC, IEEE USA, VGST Karnataka etc.
- Students from different branches (MECH. EEE, ECE, CSE, ISE, and AERO) works together as teams

Tracking Embedded Hardware Board

The hardware section features four main boards:

- Beagle Board-iM:** A laptop-like board with a 3.25" display, featuring a TI OMAP4 processor, 1GB RAM, and various I/O ports.
- Panda Board:** A high-performance board with a 4412S processor, 4GB RAM, and multiple USB ports.
- UDOO Quad:** A board based on the TI OMAP5 processor, featuring 4GB RAM and a 3.5" display.
- NVIDIA Jetson TK1:** A compact board with a powerful NVIDIA Tegra K1 processor, 8GB RAM, and a 5MP camera.

Human Tracking Mobile Robot Results - RCNN & YOLO

The tracking results are presented in a 2x3 grid:

- Top-left: RCNN tracking a person in a hallway.
- Top-middle: RCNN tracking a person in a hallway.
- Top-right: RCNN tracking a person in a hallway.
- Bottom-left: Tiny YOLO tracking a person in a hallway.
- Bottom-middle: Tiny YOLO tracking a person in a hallway.
- Bottom-right: Tiny YOLO tracking a person in a hallway.

Nitte Meenakshi Institute of Technology

Facial Movement, Facial Expression of ARIA (Using the principles of Machine Learning)

The ARIA project focuses on facial movement and expression analysis using machine learning principles.

Figure 1: Multidisciplinary research in robotics and application areas



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Organised by :

**Centurion University of Technology and Management
in Collaboration with Center of Data Science &
machine learning**

**Resource Person
Dr. Jharna Majumdar**

**Coordinator: Dr. Sujata Chakravarthy
Prof. & Head CSE, SoET**

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Shaping Lives... Empowering Communities...

Figure: Brochure of the webinar “Image processing to computer vision”

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