



An Autonomous Institute

Guest Lecture on Medical Image Processing & AI in HealthCare

Department of Information Science & Engineering

Affiliated to Visvesvaraya Technological University, Belagavi

Approved By AICTE, New Delhi

Recognized by UGC with 2(f) & 12(B) status

Accredited by NBA and NAAC

A Report on the Guest Lecture titled “Medical Image Processing & AI in HealthCare”

Date of the Event	16.05.2025
Title of the Event	Guest Lecture on ‘Medical Image Processing & AI in HealthCare’
Organized by	Dept. of Information Science and Engineering MVJCE, Bangalore

Session Summary:

Date : 16th May 2025

Time : 09.00 am - 11 pm

Venue: Seminar Hall 4

No. of Participants:120 students

Inauguration at 09:00 A.M followed by

- Welcome speech (by student - Preksha)
- Inaugural Talk

Inaugurated by:

- **Prof. Susmitha, HOD of ISE, MVJCE**
- **Resource Persons:**

1. Mr. Rajesh Kumar Tamada,

Staff Data Scientist- Deep Learning at GE Healthcare, Bangalore.

specialization in using deep learning to study medical images and rebuild PET and CT scans.

2. Mr. Vikas Kumar,

Senior Data Scientist at GE Healthcare, Bangalore.

specialization in medical image analysis using deep learning techniques.

Target Participants:

- **Students (Participated:120)**
- **Faculty members**

2. Lecture Summary:

The guest lecture started with an insightful session by Mr. Rajesh Kumar Tamada on the use of **AI in medical imaging**. The speaker addressed advanced concepts and practical use cases around *Medical Image Processing* using Artificial Intelligence.

Key topics discussed during the session:

- **Deep Probabilistic Subsampling (DPS):** A method for intelligently selecting subsets of data based on probabilistic models within deep learning frameworks.
- **Medical Image Processing:** Techniques to analyze and interpret medical images from sources such as X-rays, MRIs, CT scans.
- **Role of AI Models:** Detecting diseases, identifying abnormal conditions, assisting in diagnosis, and reducing human error.
- **VBRL (Variational Bayesian Reinforcement Learning):** Reinforcement learning- based alignment technique.
- **3D Parallelism** in AI models – covering data parallelism, model parallelism, and tensor parallelism.

A special focus was given to **Relative Visual Turing Tests**, used to distinguish between real and synthetic CT images.

- This technique aids GANs (Generative Adversarial Networks) by using discriminators to evaluate realism in synthetic images.
- It improves the stability and performance of AI models, particularly in learning from complex visual structures like tumors or lesions.
- These concepts are foundational in tasks like **MRI to CT synthesis**.

Guest Lecture Benefits:

Participants showed keen interest in learning the concepts, methodologies and gave satisfactory feedback at the end of the session.

3. Photo Gallery:



Welcome address by student, MVJCE



Head of the Department extending a warm welcome to the guest



Esteemed guest gracing the



event

Participants attentively listening to the session

4. Outcome of the Event:

The session helped participants understand cutting-edge AI techniques in medical imaging, such as DPS and GANs. Students were exposed to practical applications in healthcare, bridging the gap between theoretical knowledge and real-world applications. Feedback was overwhelmingly positive, with over 120 students and faculty attending and actively engaging in the session.