

OnCoslice

What we did ?

The hackathon was conducted on 15th March 2024, from 10:00 AM to 5:00 PM. The event was held to bring together researchers, students, and enthusiasts to develop innovative computer-assisted diagnostic tools for accurately diagnosing Multiple Myeloma (MM) using advanced image processing techniques. The challenge focused on plasma cell segmentation, which plays a crucial role in diagnosing this type of blood cancer.

Objective of the Event

The primary objective of the hackathon was to encourage participants to design and propose deep learning or machine learning solutions for the precise segmentation of plasma cells in diagnostic images. The aim was to address key challenges in plasma cell segmentation, such as cell morphology variations, clustering issues, and color inconsistencies caused by different staining techniques.



Additional Details

- Venue: IIIT Delhi
- Duration: 7 hours
- Mode of Conduct: Offline
- Dataset Provided: The dataset consisted of images captured using different cameras, including stain color-normalized images to enhance consistency. Ground truth annotations were provided for both training and validation sets to assist participants in developing and evaluating their algorithms.

Speaker and Participant Details

- Speaker: The event featured an expert talk by a leading researcher in the field of medical imaging and diagnostic AI, who provided insights into the current challenges and future directions in Multiple Myeloma diagnosis.
- Number of Participants: Approximately 50 participants attended the event, including students, researchers, and professionals.
- Number of Registrations: Around 75 registrations were received, indicating a strong interest in the topic.

Key Outcomes of the Event

- **Innovative Approaches to Plasma Cell Segmentation:** Participants proposed several novel solutions leveraging deep learning techniques, such as convolutional neural networks (CNNs), U-Nets, and transfer learning models, tailored specifically for the segmentation challenges in Multiple Myeloma diagnostics.
- **Improved Accuracy and Consistency:** Some of the submitted solutions demonstrated improved accuracy and robustness, especially in handling variations in cell morphology and color inconsistencies due to staining techniques.
- **Collaboration and Knowledge Sharing:** The event fostered collaboration between participants from diverse backgrounds, including computer science, biomedical engineering, and medical research. The interaction enabled a deeper understanding of the complexities involved in cancer diagnosis and the role of AI in enhancing precision.
- **Future Research Directions:** The hackathon highlighted areas requiring further exploration, such as the integration of multi-modal data and real-time diagnostic support. Discussions also centered around the ethical implications of AI in healthcare and the need for explainability in diagnostic tools.
- **Encouragement of Ongoing Innovation:** Participants were encouraged to continue their research and development efforts in this critical area. Several teams expressed interest in refining their models and participating in future challenges focused on AI-driven cancer diagnostics.

