ICAR-National Rice Research Institute (ICAR-NRRI)
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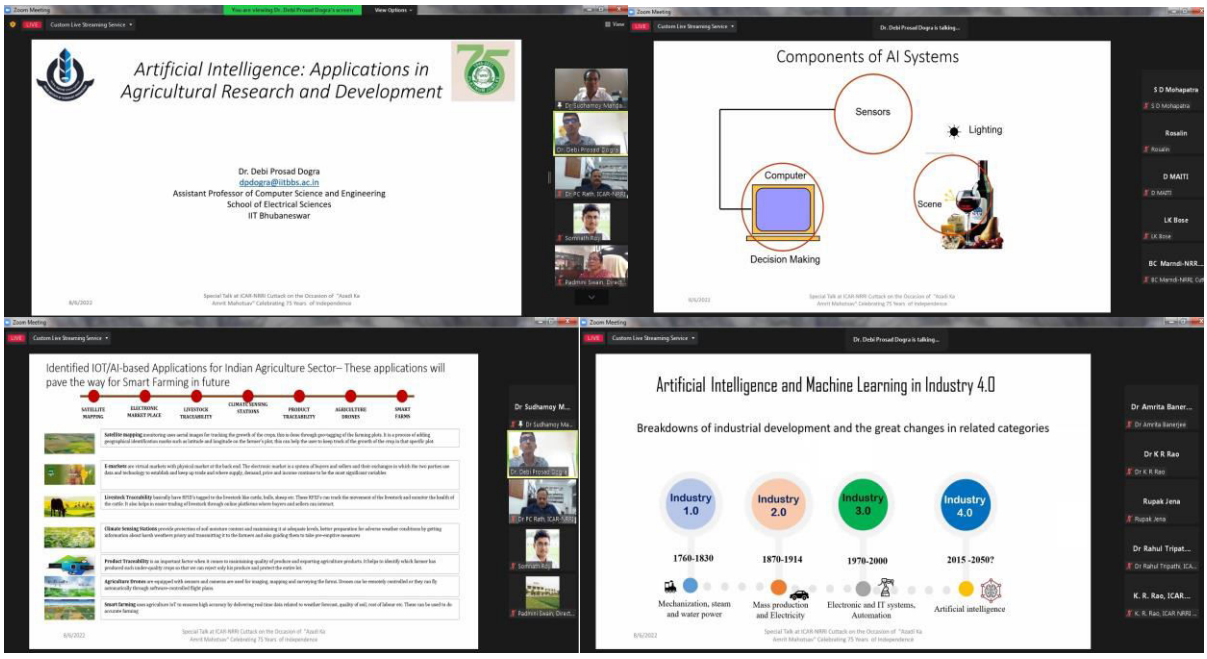
Cuttack - 753006

Azadi ka Amrit Mahotsav - Celebration of 75 Years of India's Independence at ICAR-National Rice Research Institute, Cuttack, India

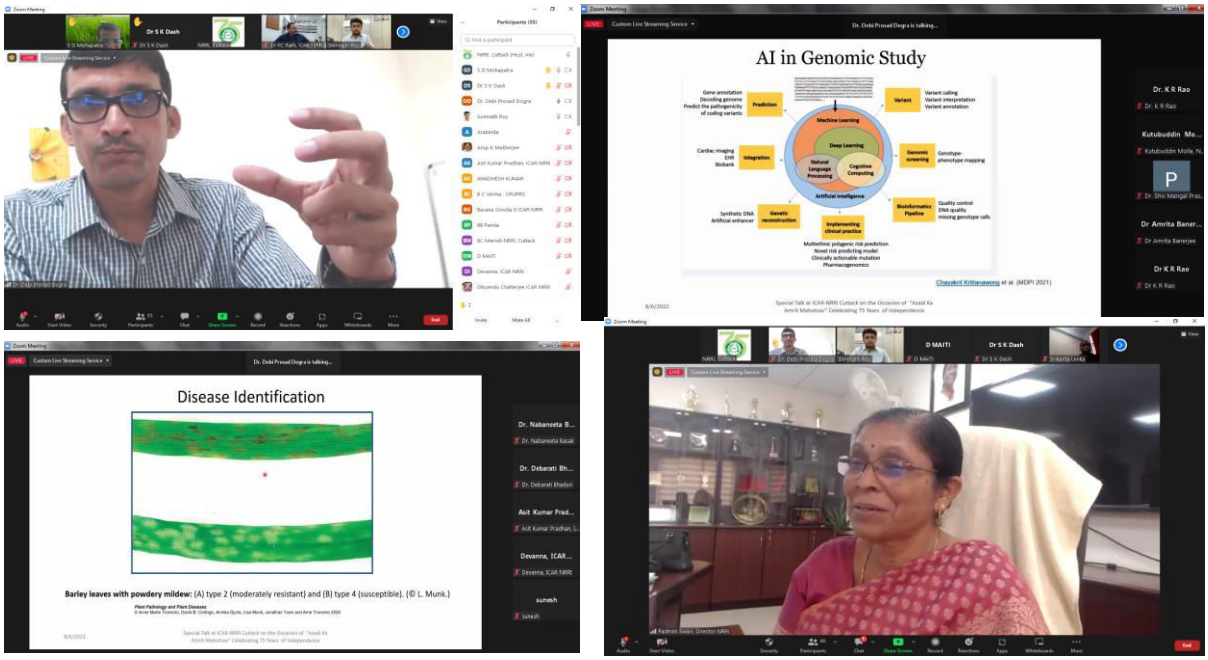
Special Talk - "Artificial Intelligence: Applications in Agricultural Research and Development"

The ICAR-National Rice Research Institute, Cuttack is conducting a Special Talk series to celebrate 75 years of India's independence espoused as *Azadi ka Amrit Mahotsav* (AKAM). The eleventh Special Talk in the series – **"Artificial Intelligence: Applications in Agricultural Research and Development"** was delivered by **Dr. Debi Prosad Dogra, Assistant Professor and Group Leader, Human-Machine Systems Research Group, School of Electrical Sciences (Computer Science & Engineering), Indian Institute of Technology, Bhubaneswar** on 06 August 2022 at 3:00 p.m. on virtual platform.

Rapid advancement in computational hardware has opened up various possibilities to tackle difficult problems with the help of artificial intelligence (AI) and machine learning (ML). During the last decade or so, AI and ML guided automated systems have started replacing human dependent systems in services including surveillance, industrial processes, agriculture, healthcare, etc. Computer vision and visual surveillance are two of the areas that are possibly receiving the highest dividend from the emergence of AI and ML. This talk by Dr Dogra summarized the state-of-art AI and visual surveillance systems that are primarily built with the help of supervised as well as unsupervised ML algorithms. The focus is mainly given to the services ranging from computer vision guided smart agriculture, internet of things (IoT) and agriculture, genome analysis using AI, crop monitoring, etc.



According to the Food and Agriculture Organization, the world population will reach over 9 billion by 2050. Rapid population growth, shrinking farmland, dwindling natural resources, erratic climate changes, and shifting market demands are pushing the agricultural production system into a new paradigm. The new agricultural system must become more productive in output, efficient in operation, resilient to climate change, and sustainable for future generations. AI holds promise in addressing the challenges of this new paradigm. For example: Plant diseases are a major threat to the environment, economy, and food security. Early detection of crop disease is essential for effective disease management. AI-based image recognition systems could recognize specific plant diseases with a high degree of accuracy, potentially paving the way for field-based crop-disease identification using mobile devices, such as smartphones.



The scintillating talk by Dr Dogra on "**Artificial Intelligence: Applications in Agricultural Research and Development**" elicited a lively discussion that drew many participants in the vortex. About 100 participants attended the special talk in virtual mode from across the country.

The Special Talk was presided over by Dr. Padmini Swain, Director (A), ICAR-NRRI, Cuttack. Dr. P.C. Rath, Head (A), Crop Protection Division (CPtD) & Chairman, AKAM Committee at NRRI welcomed the Special Guest. Dr. Sudhamoy Mandal, Principal Scientist, CPtD & Convener, AKAM introduced Dr Debi Prosad Dogra to the august audience. The program was elegantly moderated by Dr Somnath Roy, Senior Scientist, CRURRS, Hazaribagh. ARIS Cell of the institute hosted the virtual meeting successfully.