AI and Data Analytics Lab

AI and Data Analytics Lab is a central facility created for research, teaching, learning, and practice activity. The lab is committed to advance learning and supports collaborations for developing AI/ML based solutions. Presently we have collaborative projects in the area of vision-based applications with SAMSUNG R&D, Spicer India Ltd., and University of Agricultural Sciences Dharwad.

The fields of research involve applying AI/ML in the domain of vision, speech recognition, NLP, and optimization of AI/ML for on devices. The lab has 16 faculty, 20 research students, and 150 UG/PG students committed to advancing learning and supporting collaborative activities in supporting AI-based solutions in the respective domains. The lab supports teaching activities for AI/ML courses and Embedded Intelligence course which are codesigned and co-delivered with experts from Industry.

Various collaborative projects, undergraduate and post-graduate projects involving AI-based algorithms for vision-based real-time applications, optimization methods for AI algorithms, AI-based data flow optimizations for SDN and 5G networks are being carried out.

Lab infrastructure:

HP Z8 Workstation – 1
HP Z440 Workstation – 2
HP Compaq pro 6300 – 4
HP Pro 400 G2 MT – 2
HP 280 G3 MT PC – 2
HP Pro 3330 MT PC – 1
DSLR Camera – 1
NVIDIA Jetson kit – 2

Ongoing Research

AI-based classification and SuperResolution of Indian Digital Heritage images for Crowd Source Framework

The Crowdsourced framework focuses on building dataset of Cultural Heritage Sites across India for digitization through data collection, data pre-processing, classification, Super Resolution, storage, and query-based retrieval.
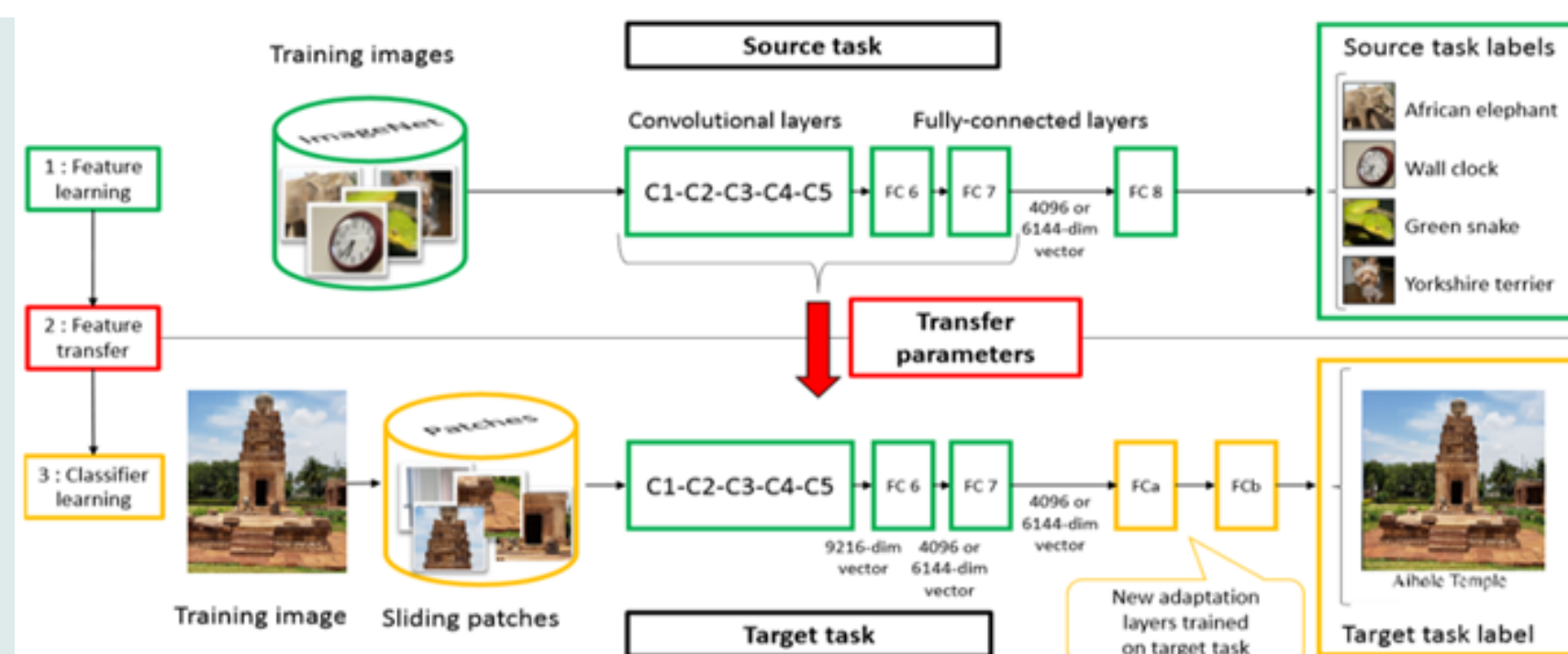
AI-based pest control

A Smart agriculture is the need of the hour in today's Indian agriculture sector. In this collaboration, we are working with UASD to develop technological solutions using deep learning to address agricultural challenges of pest management and disease management in maize.
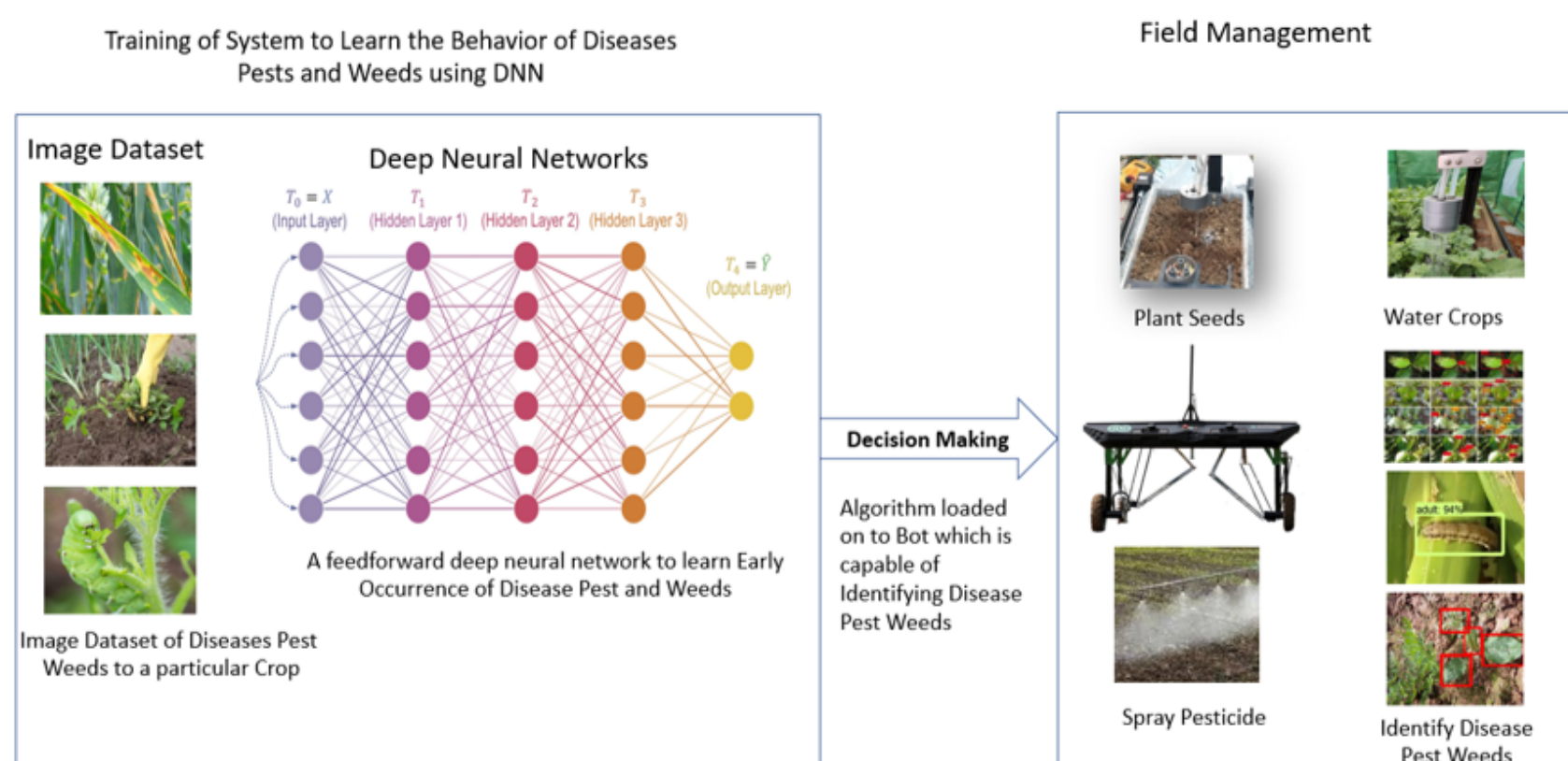
AI-based metal grading

Machine vision is one of the most rapidly developing and popular areas of application of AI in metallurgy. In this collaboration with Spicer India Pvt. Ltd., AI-based automated grading of ductile iron and medium carbon steel in casting and forging is done based on analyzing defects in microscopic images.

AI based Metal Grading

CASTING

FORGING