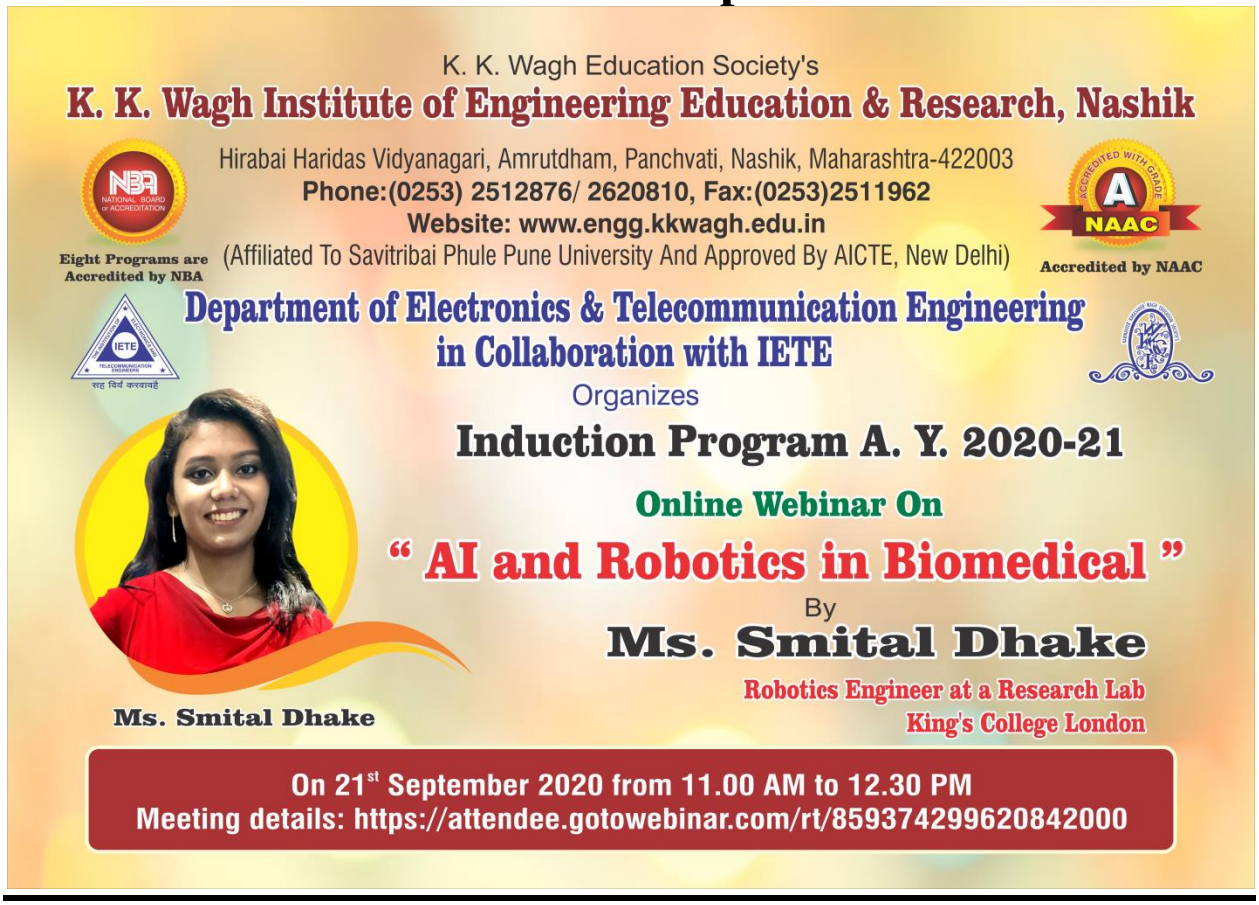
K.K.Wagh Institute of Engineering Education and Research

Hirabai Haridas Vidyanagari, Mumbai Agra Road Amrutdham, Panchavati, Nashik, Maharashtra 422003

Induction Program 2020-21

Webinar Report



Date: 21st September 2020

Time: 11:00 am

Duration: 2 hours

Resource person (with designation): Ms. Smital Dhake, MSc in Robotics and Artificial Intelligence, King's College London

Topic: 'AI and Robotics in Biomedical"

Subject (SE/TE/BE) mapped: -- BE AI

Number of attendees: 237

Attendees:

- All staff members of E & TC/Electronics department
- Students of B.E, T.E, S.E E&TC
- Students of B.E, T.E, S.E electronics

Outcomes:

- Increased awareness of AI
- Brief understanding of the pattern recognition technique
- Few applications in the Biomedical field explored`

SUMMARY:

E & TC department of K. K. Wagh Institute of Engineering Education & Research, Nashik in collaboration of IETE Nashik subcenter organized Induction Program A.Y.2020-21.

A webinar on " **'AI and Robotics in Biomedical** " by Ms. Smital Dhake , MSc in Robotics and Artificial Intelligence , King's College London was organized on 21st September 20 at 11:00 AM. The Webinar started with a Warm Introduction of Smital Dhake**.**

Ms. Smital Dhake Completed BE from KKWIEER and MSc in Robotics and AI from King's College London. At KKWIEER, she was one of the ISTE Top 14 Speakers in the college as well as the ISTE Secretary. Her BE project was part of the BAJA SAE Competition. Ranked AIR 4th and ranked 23rd in the International rounds of the competition in the US. During Master's, she was a lead in the Robotics club, where she was part of a team to make a prototype of the Mars Rover. She has worked on and is working on research projects for Biomedical Robotics. Presently she has published 6 research papers in the field of robotics, deep learning, and reinforcement learning in the process if publishing. She holds 2 job offers as a Robotics Engineer.

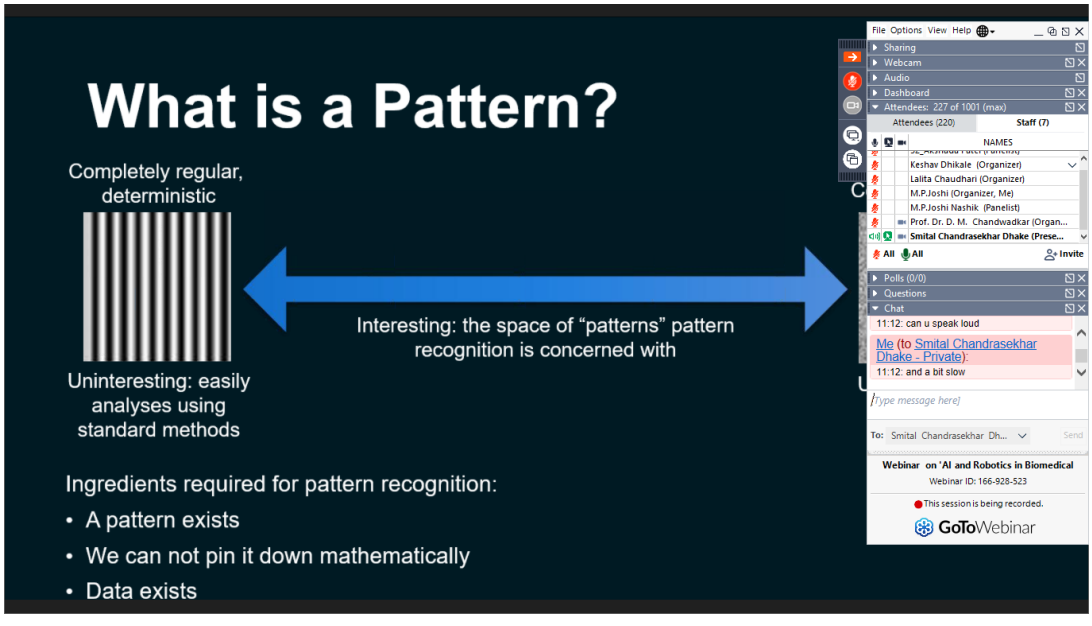
Objectives of the webinar

- To understand definitions of AI and other related keywords
- To understand the basis of AI (Pattern Recognition and it's generalised working)
- To apply learnt concepts to few medical applications

Students actively participated in the webinar as she explained various aspects recent trends in AI. She explained basic concepts of AI, Machine Learning, Pattern Recognition and explained term pattern recognizing in deep. Explained area of application of AI such as. Finance, retail, medical, speech recognition, image processing etc... Example regarding sorting of fish, medical imaging, drug discovery and medical application robot etc provided details regarding various steps in AI, machine learning and automation. Explained in detailed the relationship between living beings behaviour and robotics and types of learning such as supervised and unsupervised.

At the end Q&A session at the end where students shared their difficulties which were aptly addressed them. At last the webinar ended with thanking her for taking out her precious time and share her knowledge with students.

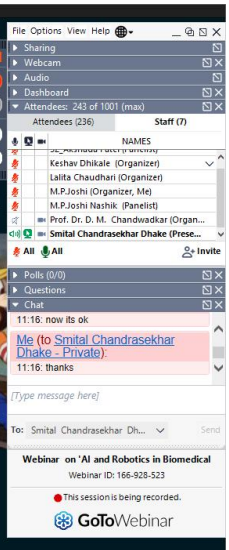
Screenshot of the webinar



Understanding with an ex

- Sorting Fish: Use optical sensing to sort incoming fish conveyor according to species
- Set up a camera to take images
- Segmentation
- Extract **features**
- Pass features to a classifier

Sea Bass



Types of Learning

- Supervised Learning
  - Regression
  - Classification
- Unsupervised Learning
  - Clustering
  - Embedding
  - Factorisation