CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

Chandubhai S Patel Institute of Technology

Faculty of Technology and Engineering

U & P U. Patel Department of Computer Engineering

Date:24/06/2024

Event Application No in E-governance: 2023-24/01072
Event Name: Applied Deep learning Model for image Classification
Date: 15/03/2024
Venue: CE, CSPIT.

1. Speaker Profile

Yagnik Poshiya, Alumnus of Charotar University of Science and Technology

Professional Background:

Yagnik Poshiya is a founder and deep learning researcher at NEUROWORK Research Labs, focusing on cutting-edge research in healthcare and agricultural industries. He previously interned at the Divine Lab at IIT Delhi, working on real-time emotion assessment using eye-tracking and EEG, and at Charotar University, where he worked on brain thoughts visualization showcased at the NSM Open Hackathon 2023. Yagnik also interned at the Bhaskaracharya National Institute for Space Applications and Geo-informatics, developing secure fingerprint authentication using deep learning.

Skills and Interests:

Yagnik is proficient in deep learning, machine learning, neuroimaging, and computer vision, with expertise in Python, C++, PyTorch, Tensorflow, and various other tools and frameworks. His interests include neural networks, quantum machine learning, and cognitive science. He has a proven track record

of leadership and event management, having led multiple workshops on deep learning and machine learning, including sessions for students and faculty at Charotar University and the B. & B. Institute of Technology.

Achievements:

Yagnik's notable achievements include being selected among the top teams globally for the NSM Open Hackathon 2023, receiving grants for AI projects from i-Create, and coordinating a machine learning club at Charotar University. He also reached the regional round of the Azadi Ka Amrit Mahotsav Hackathon 2022 and was invited to the MumbaiHacks Hackathon 2023.

2. Workshop Activities and Description

Overview: The workshop was divided into three parts, each focusing on different aspects of deep learning and IoT devices, culminating in the presentation of an innovative project.

Part 1: Diving into Deep Learning

→ **Introduction to Deep Learning:** Yagnik Poshiya began with an introduction to deep learning, explaining its significance and applications.

→ **Convolutional Neural Networks (CNNs):** He provided an in-depth explanation of CNNs, a fundamental architecture in deep learning used for image recognition and processing.

→ **Building CNN Architecture:** Participants learned how to create their own CNN models from scratch, including defining layers and implementing activation functions.

→ **Binary Classification Problem:** The session included a hands-on activity where participants solved a binary classification problem. Yagnik guided them through the process, ensuring everyone could follow along and understand each step.

Part 2: Introduction to IoT Devices

→ **Basics of IoT:** The second part started with an introduction to Internet of Things (IoT) devices, explaining how they connect and interact with each other and the internet.

→ **Integrating Deep Learning with IoT:** Yagnik discussed the potential innovations that arise from merging deep learning with IoT. He showcased various examples where this integration has led to groundbreaking solutions in different industries.

→ **Hands-On IoT Project:** Participants explored how to set up and program IoT devices. Yagnik demonstrated how to connect sensors and actuators, collect data, and process it using deep learning models.

Part 3: Project Presentation – PragyaDristi

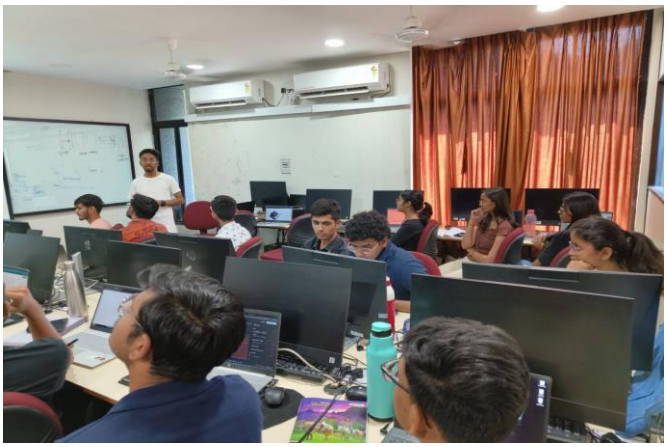
→ **Project Overview:** The final part of the workshop featured the presentation of "PragyaDristi," a smart stick designed for blind individuals. This project exemplified the practical application of combining deep learning and IoT.

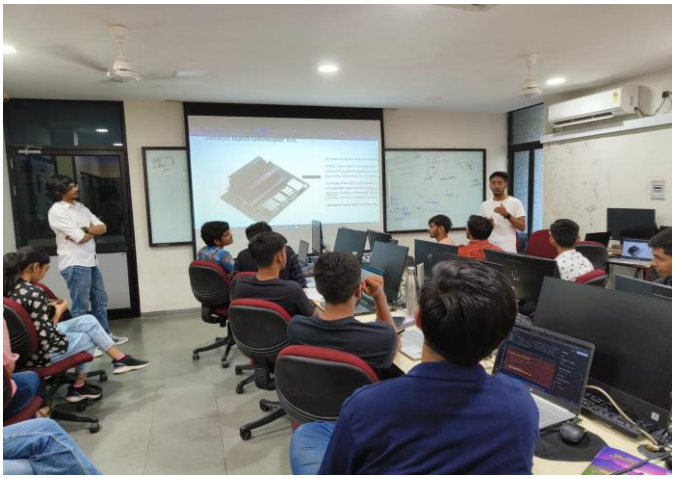
→ **Technical Details:** Yagnik explained the technical aspects of the project, including the sensors used, the deep learning algorithms implemented, and how the stick aids visually impaired users by detecting obstacles and providing feedback.

→ **Demonstration:** A live demonstration of PragyaDristi was conducted, showcasing its functionality and effectiveness. Participants had the opportunity to ask questions and gain deeper insights into the project's development process.

The workshop was highly interactive, with participants actively engaging in discussions, asking questions, and collaborating on exercises. Yagnik Poshiya's expertise and approachable teaching style made complex topics accessible and enjoyable for everyone involved.

3. Photos





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