Press Release

ARTIFICIAL INTELLIGENCE PLAYING IMPORTANT ROLE IN KNOWLEDGE ECONOMY- Dr. Umar Saif, VC ITU

Lahore, June 3, 2018

Machine learning and Artificial Intelligence laboratory of Information Technology University (ITU) the Punjab is striving hard to make Pakistan a knowledge economy under the able guidance of a group of PhD scientists by extending training to young engineers to get exemplary results from the industry through automation. Dr. Umar Saif the founding Vice Chancellor of ITU expressed on the occasion of the exhibition of ITU the Punjab's Signal Processing and Information Decoding Research (SPIDER) Research Laboratory's "2nd Machine Learning Projects Exhibition here today.

The exhibition held after four-month training of M.S and PhD students of ITU who presented their Machine Learning course projects, geared towards solving interesting and locally relevant problems. The projects included e-Commerce, Mechanical, Electrical industries, advance warning system to monitor machines, automated diagnosis system for diseases in the medical sector, artificial intelligence based computer to read and understand Urdu language and other research based projects.

The project 'Keystroke based Biometric Verification' deals with continuously monitoring the identity of a user through biometric means without any extra hardware. This system takes advantage of unique keystroke pattern of a user for biometric verification. It has applications in e-learning, financial services and multi-factor authentication. e.g Edx can use this to see if user submitting assignment is legitimate or not. Online banking service can use typing profile of user as added security without requiring any extra hardware. Sensitive organization can ensure their system is only being used by authorized staff.

The project 'Toxic Comment Classification' can detect harsh, hateful, abusive, threatening, insulting, or any other inappropriate sentences from human-written texts as AI and Machine Learning enable the computers to detect toxic or inappropriate sentences from any written text in the English language. For the clinical decision support systems with reliable medical diagnosis a solution has been established to predict and diagnose blindness because of retinal disease under project 'Medical Diagnosis through Retinal Fundus Images'. A deep learning based system has been developed under project, 'Personalized Medicine: Redefining Cancer Treatment', which uses the Artificial Intelligence to mimic the work of a clinical pathologist by distinguishing between different types of genetic mutations in cancerous tumors, based on the associated clinical evidence. The research is geared towards building personalized medicines for cancer treatment. This solution ranked among top 30 out of 400 other solutions from all over the world.

The other projects displayed in the exhibition included Sleep Disorder Identification, Gunshot Detection, to propose an extension to the already implemented "Safe City Project" from the Government of Punjab, Predicting Faults in Operations of Train Cars to predict the fault occurrence and detection of the fault component in a moving rail car bogie, Compressive Sensing MRI Reconstruction, to go beyond speed by drastically decreasing acquisition times in MRI without sacrificing image quality.

Grocery stores are always difficult to forecast for sales and purchasing of items, the project Walmart Data is aimed to predict unit sales quantities of sales items across 54 grocery stores using the technique of rolling means and LSTM neural. This project will help managers in warehouse management, man power estimation and effective sales promotions.

Automatic Speech Recognition, Bitcoin Price Prediction, Industrial Plant Fault Detection, General Audio Tagging System, Cricket Win Prediction, Object Detection using Oriented Response Networks, Domain Adaptation using Transfer Learning, Urdu Speech to Text using Transfer Learning, Offline Urdu Image to Text Recognition and Writer Identification, Estimation of Remaining Useful Life of Ball Bearing in Machines, Predicting E-Commerce Returns using AI and Optimal Detection of Side Channel Attacks on Cache Memory using ML were the other projects, which attracted the visitors.