WEBINAR ON

NEED FOR OPTIMIZATION TECHNIQUES IN MACHINE LEARNING APPLICATIONS

"Because of new computing technologies, machine learning today is not like machine learning of the past. While many machine learning algorithms have been around for a long time, the ability to automatically apply complex mathematical calculations to big data over and over, faster and faster is a recent development. Machine Learning algorithms like space robots, auto-pilot, tele-surgery require optimization. " says **Prof. R. Subramanian**, **Senior Professor, Dept. of Comp. Science, School of Engg. & Technology, Pondicherry University.** With an endeavour to impart the knowledge of R&D Professionals, Industry personnel, Academicians and students across the country, the departments of CSE and IT , VFSTR Deemed to be University in association with Computer Society of India(CSI) was conducting a series of free webinars on recent and Emerging technologies. As part of this series, on 16th July 2021, **Prof. R. Subramanian** gave insights on "Need for Optimization Techniques in Machine Learning Applications". His talk was very exploratory and around 202 National and International students, faculty and Industry personnel have participated in this event through online.

Prof. R. Subramanian has quoted that Mathematical formulations of most of the machine learning algorithms are expressed as numerical optimization methods. When we want to train a machine, we often lead to a problem of finding an optimal set of parameters so that the machine should excel itself during the testing phase. He also quoted the useful insights basics of system identification methods to optimize the hyper-parameters associated with the dynamic systems using adaptive control model. Further we explain the Bayesian optimization techniques using sample data and gaussian process. Also, we will illustrate how optimization models are utilized in real time applications by considering the two examples viz, Covid model and life in Mars (model by Tesla, USA.). At the end of the talk, the speaker answered very challenging questions posed by the participants. Speaking on this occasion, Dr D Venkatesulu,the Head of the Department, CSE expressed his thanks to Prof R. Subramanian, and all the participants. On this occasion, Dr. Lavu Rathaih, Chairman and Dr. M.Y.S Prasad, Vice-Chancellor congratulated the Heads of the Department, CSE & IT and the organizing team and directed to organize many more such events in the near future in the interest of students and the faculty