Exciting opportunities in AI & ML for Engineering Applications

Course Title	Exciting opportunities in AI & ML for Engineering Applications
Course Category	Specialized Skills/ Research/
Relevant Discipline(s)	Chemical Engineering, Biotechnology, Petroleum and process engineering
Duration of course in equivalent integer no. of days (min 3 days, 1 day = 6 hrs of lectures/hands on sessions)	4 days of 6 hours each
Proposed dates	**12 Dec, 2020 to 19 Dec, 2020**

Brief Course Description and Course Contents
The course is oriented towards AI & ML approaches for developing sound engineering designs and practices. In the drive towards good manufacturing practice, one of the key areas of focus has been leveraging data analytics based approaches for the continuous improvement of plant performance. While quality can be built into the design using QbD, the need for an overall advisory system based on AI & ML that continuously learns and adapts to the inherent variations during manufacturing, is being strongly felt. Such AI & ML based methods also promote operations excellence in engineering operations through their ability to benchmark process operations with respect to performance limits. They play an important role in quickly detecting aberrant operation and initiating remedial measures so as to align the plant back along prior established superior benchmarks. Such tools are therefore proving to be very useful in the context of overall plant optimisation, productivity & safety. This workshop will provide a tutorial introduction to the tools mentioned above. Representative case studies involving industrial systems taken from engineering applications. The course will also involve hands-on sessions on representative software platforms that showcase the technology advances in information extraction and knowledge translation. A review of some commercial products and services in this area will also be presented.

Instructor Details			
S. No.	**Name of the Instructor**	**Department**	**Email**
1	Ravindra Gudi	Chemical	ravigudi@iitb.ac.in
2	Mani Bhushan	Chemical	mbhushan@iitb.ac.in
3	Sharad Bhartiya	Chemical	Sharad_bhartiya@iitb.ac.in