Data Mining for Business Processes

Overview

A business process is a collection of inter-related activities that involves multiple decision points, resources, and artefacts that leads to an outcome of value to the service provider and customer. Multiple IT and enterprise systems execute a business process, and the execution of the process is captured in these systems. The data representing the execution of the process is referred to as an event log which can provide several critical insights to the stakeholders. Analyzing events of the event log helps track the performance of the business process.

Recent advances in data mining have enabled going beyond traditional techniques of discovering and analyzing the execution of the process by predicting the future behavior or outcome of the business process. Some examples include predicting the time taken to complete the process or predicting an unsatisfactory outcome of an executing business process instance. However, applying data mining to an event log requires additional considerations of representing the sequence of business process activities, distinguishing the process and activity information, considering human and automated resources, and understanding the process outcomes. Further, the need to provide the reasons for these predictions is essential given the decision-making they support. It is, therefore, necessary to understand the business process to provide accurate and explainable analysis of business process outcomes. This course introduces students and professionals in applying data mining to real-world business process execution data, understand multiple methods to analyze, preprocess, represent and utilize data in decision making. The course introduces the students to the use of explainable predictive analytics that is relevant in the context of predicting business process behavior.

Modules	**November 23 to November 27, 2020** 14 hours Lectures and 12 hours Tutorials/LAB Number of participants for the course will be limited to 50
You Should Attend If…	• You are corporate Professional working in research wing of any Private or Public Organizations • Executives, engineers and researchers from manufacturing, service and government organizations including R&D laboratories. • Student students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions.
Fees	The participation fees for taking the course is as follows: Participants from abroad: US $500 Industry/ Research Organizations: INR 10,000 Academic Institutions/ Faculty: INR 5000 Students & Research Scholars: INR 2000 Above fees include all instructional materials, computer use for tutorials, 24 hr free internet facility. The participants will be provided with accommodation on payment basis. **Last date to apply: November 10, 2020**
Mode of Registration	All prospective participants need to do web registration for the course on GIAN (http://www.gian.iitkgp.ac.in/GREGN/Index) portal. After the mandatory web registration. After the mandatory web registration, participants should share the registration details with the course coordinator by an email (sumitk@iitj.ac.in). The shortlisted participants will be informed by email to register for the course by making full payment of the course registration fee.

The Faculty

Dr. Renuka Sindhgatta, Assistant Professor, Queensland University of Technology, Brisbane, Australia.

She has over 15 years of research experience in the areas of software engineering and business process analytics. Prior to joining QUT, Renuka was a Senior Technical Staff Member at IBM Research where she applied machine learning algorithms on the operational data in various domains such as IT Management, Telecom and Financial services. She has over 15 patents granted or filed. Renuka has over 30+ publications including top conferences such as KDD, CIKM, ASE, OOPSLA, and ICSE. She currently leads the research on using predictive analytics for evaluating outcomes in service based applications. This includes key characteristics of services namely risk, performance, and resourcing. The focus is on not only building accurate models but also infusing trust through interpretable models, including checking for bias, and considering the data lineage.

Dr. Sumit Kalra, Assistant Professor, Department of Computer Science and Engineering, IIT Jodhpur

He is working as Assistant Professor since July 2018 at IIT Jodhpur. He did his Ph.D. from IIT Kanpur in 2018 in the Software Architecture. He also worked with industry and corporate research organizations. He is actively involved in a couple of start-ups. He has been granted a US patent along with good research publication record in the domain of design patterns. He is part of various ongoing research projects in the domain of Data Analytics as PI and Co-PI.

Course Co-ordinator

Dr. Sumit Kalra

Department of Computer Science & Engineering,
Indian Institute of Technology Jodhpur,
NH-62 Nagaur Road
Karwar, Jodhpur 342037
Rajasthan

Phone: 0291-2801259
E-mail: sumitk@iitj.ac.in

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