



N=1 Consumer Analytics using AI

13 Dec 2019 [9am]-15 Dec 2019 [6pm] at IIT Bombay



Introduction

Machine learning (ML) has been around and extensively used in many business applications. It has been successful in modelling predictive analytics in business context and in many domains like image recognition, vision, voice recognition and to certain extent natural language processing (NLP). However, such technologies in retail consumer context have certain issues and limitations. The major reasons: 1. unique items and their combinations such as bundled offers are very high (the term 'item' here is referred to product, content, service, campaign, offer etc.), 2. each retail item has large number of features and need to model features to match intelligently to what the consumer is looking for or her/his needs are, 3. multiple and different types of channels, locations or touch points to interact, sell, deliver, buy or consume the items and related services, some of them need to be analysed in real-time!, 4. wide-variety and changing demographics of consumers with individual interests, constraints, objectives, choices and behaviours, 5. cold start problems: no transaction data available and finally, 6. the number of unique retail consumers to modelled themselves are huge run in millions!

To offer personalized experiences (N=1) to each consumer, the organization needs to look the technologies which can model, analyse and understand one entity at a time such as one consumer at a time, one item at a time, one touch point/channel at a time! and so on. Same item needs to be modelled based on delivery channel, location and time, for example, a piece of music can be downloaded as collection, it can be listened on streaming media or set as a hello ring tone! the mood of listener may be important in streaming media compared to downloads!

It is difficult to build millions of models to understand millions of consumers individually involving various connected and related entities and their features especially qualitative ones using ML technologies like neural networks. Data driven technologies do not leverage valuable human expertise and common-sense knowledge, they do not understand semantics and context behind various features of items, consumer past behaviours and demographics, touch-points and their locations, channels and time!

Combining knowledge and context-driven AI technologies with data driven technologies is the best way to look forward as it takes into account human and contextual intelligence (semantics, context, common-sense and deep domain knowledge) + machine intelligence (understanding broader insights, wisdom of crowd, etc.)! Modelling and automating them at N=1 level can help to offer highly personalized experiences to individuals, each one feeling "Hey, wow, this is what exactly I need and looking for!" at the same time helping in long-tail marketing, increased sales, optimized resources and costs.

Middle and senior management level professionals working, consulting and implementing solutions in consumer-centric organizations in retail, BFSI, telecom, travel, eCommerce, real-estate, fashion etc. industries and looking forward to understand what, where and how they can leverage knowledge-based and data driven AI technologies for N=1 consumer analytics to improve consumer experiences, increase sales and optimize resources.

Coverage & topics

- Introduction to AI, machine learning and deep machine learning
- Building of intelligence:
 - ✓ Knowledge engineering and modelling
 - ✓ AI techniques: artificial neural networks, Genetic algorithms, rule-based expert systems (part of classical AI technologies), case-based reasoning (lazy machine learning technology), model-based reasoning
 - ✓ Filtering techniques (recommender systems)
 - ✓ Natural language processing and chat-bots
- Data driven, human and contextual intelligence: putting them together to work!
- Modelling generic problem types at N=1 level
 - ✓ Consumer N=1 (segment of 1) and real time analytics, role of meta-data and data model for N=1, deep profiling, personalization and recommendation
 - ✓ Intelligent and contextual matching
 - ✓ Operationalizing and automating intelligence
- Discussion on select successful case studies

Venue & Accommodation

Jalvihar Seminar Room, IIT Bombay, Powai, Mumbai. Limited accommodation is available in IIT Bombay guest house on first cum first served basis. Fees does not include accommodation charges and need to be paid

Who will get benefited?

Programme fees & Link

Rs. 25,000/- including GST. The last date for registration is 9 Dec 2019. The online registration and programme fee payment can be done on the link. https://portal.iitb.ac.in/ceqipapp/courseDetails.jsp?c_id=2033. Note as per CEP office rules: certificates will be issued only to participants registered online in the CE&QIP portal.

Pedagogy & Speakers

Lectures on underlying concepts and theory behind technologies, discussions and demos, illustrations using excel, brief case studies/business applications. Participants can bring their data-sets or use-cases to address.

Dr. Rajendra Sonar, Professor of Information Systems/Technology at SJMSOM, IIT Bombay will be coordinator of the programme, will be delivering most of the sessions. Other faculty members from IIT Bombay as well as from the industry will also be delivering lectures.

Prof. Sonar finished his Ph.D. in applied AI in 2000 and has been working on intelligent systems and applications more than two decades and has extensively published his work on this topic in international conferences and journals.

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