Big Data Analytics & Business Intelligence

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Overview

Business intelligence (BI) systems are applications and technologies for gathering, storing, analyzing, and accessing information for better business decision making. Examples of BI systems include measuring and monitoring key performance indicators, benchmarking and forecasting sales, performing data mining and analysis of customer information to discover new business opportunities, and building enterprise dashboards to integrate and visualize information from various business areas. The demand for building and managing BI systems in today's very competitive and challenging economy is high where data text, Web & Social Network Mining play a very important role. This course provides an introduction to the field of business intelligence and big data analytics, which has been defined as the extensive use of data, statistical and quantitative analysis, exploratory and predictive models, and fact based management to drive decisions and actions.

The explosion of computing power and data acquisition techniques have led to huge amounts of data (BIG DATA) within organizations. Big Data Analytics is receiving a lot of attention these days and organizations are investing heavily in acquiring the necessary infrastructure and skilled workers (Data Scientists) to leverage the vast amount of operational and external data to gain competitive advantage. This has led to a big demand for professionals with skills in data management, statistics, & business analytics. Business intelligence technologies such as data warehousing, online analytic processing, data mining, XML data processing, and data semantics have matured and become main stream in generating valuable controls and providing decision-support. This course will focus on not only the basic concepts in BI and Big Data analytics, but also the tools and techniques used to generate BI within an organizational context. There is also an emphasis on fundamental concepts of Machine Learning, NLP, Text Mining and their applications. This course includes lectures, presentations, and demonstrations that emphasize discussion and illustration of methods, as well as practical exercises that provide both a sound base of learning and an opportunity to test and develop various skills. The use of BI and big data analytics software supports the presentation of the material. Students will get hands-on experience by working with SQL Server and other open source tools such as R, Hadoop Eco System and various visualization tools.

Primary Objectives

The primary objectives of the course are as follows:

- Exposure to the fundamentals of business intelligence and big data analytics.
- Designing and developing data warehouses and data marts for an organization.
- Understand issues related to data extraction and preparation.
- Extract, cleanse, consolidated, and transform heterogeneous data into a single enterprise data warehouse.
- Building business intelligence portals and visualizations.
- Analyze data to generate information and knowledge that lead to informed decisions for businesses.
- Data, Text and Web Mining in the context of Big Data and Business Applications to Big Data Analytics Applications for Business Intelligence.
- Understand basic concepts in Big Data analytics and parallel data processing.
- Use Hadoop and related big data technologies such as Map Reduce, Pig, Hive, and Impala in the context of big data management and problem solving.
- To gain an understanding of how managers use business analytics to formulate and solve business problems and to support managerial decision making.

Course Details	Dec 14 – Dec 19, 2017
	Number of participants for the course will be limited to sixty.
Venue	**Turing Hall, Department of Computer Science and Engineering,**
	College of Engineering Guindy, Anna University,
	Chennai 600025.
Modules	A. **Introduction to Business Intelligence, Business Modeling and Analytics**
	B. **Data Warehousing and Data Provisioning**
	C. **Data Warehousing for Business Decision Making**
	D. **Data Mining for Cross-Sectional and Temporal Data**
	E. **Linear Models and Use of R for Data Mining**
	F. **Data Visualization and Business Applications**
	G. **Introduction to Big Data and Big Data Tools**
	H. **Machine Learning for Big Data – Text, Web and Social network Mining**
	I. **Natural Language Processing and Machine Learning**
	J. **Big Data Analytics for Competitive Advantage in the Business Scenario**
No. of Credits	1
You Should Attend If…	▪ You are a computer science engineer or research scientist interested in big data analytics and business intelligence.
	▪ You are executives, software engineers and researchers from IT, service and government organizations including R&D laboratories.
	▪ You are a student at all levels (B.E/BTech/MSc/M.E/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: Rs. 5000/-
	Faculty from Academic Institutions: Rs. 3000/-
	Students/Research Scholars/Post-Doctoral Fellow: Rs.1000/-
	The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility.

Benefits

- Can be considered as value added courses (if applicable).
- Hands on experience working with SQL Server and other open source tools such as R, Hadoop Eco System and various visualization tools.
- Comprehension of business analytics and it facilitates in solving business problems in real world environment.

The Faculty

Vijayan Sugumaran is Professor of Management Information Systems and Chair of the Department of Decision and Information Sciences at Oakland University, Rochester, Michigan, USA. He is also WCU Visiting Professor at Sogang University, Seoul, South Korea. He received his Ph.D in Information Technology from George Mason University, Fairfax, Virginia, USA. Dr. Sugumaran is passionate about teaching and cares about his students' education in a holistic manner. Dr. Sugumaran is the editor-in-chief of the International Journal of Intelligent Information Technologies. He is the Chair of the Intelligent Agent and Multi-Agent Systems mini-track for Americas Conference on Information Systems (AMCIS 1999 - 2017).
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T V Geetha completed B.E in ECE from College of Engineering, Guindy in the year 1982. She then joined as Teaching Research Fellow in the department of ECE at the same institute also completed M.E in Computer Science and Engineering. Later she joined the Department of Computer Science and Engineering when it was first established. She completed her Ph.D in the area of Natural Language Processing in the year 1992. She has over 230 papers in national and international journals and conferences. She has been awarded the Young Scientist award from the Government of Tamilnadu in the year 2000, a Special Mention award from the Chief Minister of Tamilnadu in the year 2002 and the Women of Excellence award from the Rotract club in the year 2003.

Dr.D.Manjula is the Professor and Head of the Computer Science and Engineering Department, CEG Campus, Anna University, Chennai, India. She is the Additional Director for the Constituent Colleges of Anna University and Independent Director of Tamil Nadu Arasu Cable TV Corporation Limited. She received her B.E. degree in Electronics and Communication Engineering from Thiagarajar College of Engineering, Madurai in 1983 and her M.E. degree in Computer Science and Engineering degree from Anna University, Chennai in 1987. She obtained her Ph.D. degree in Information and Communication Engineering from Anna University in 2004. She has nearly 35 years of teaching experience in CEG campus, Anna University, Chennai since 1984.

Course Co-ordinator

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