

The University of Texas
Red McCombs School of Business
Analytics Workshop
Synopsis and Outline

**Increase Cross and Up Selling of Products & Services
Application using Market Basket Analysis**

By

[Ajay Bhargava](#), CEO, [Analytics Advisory Group](#)

Course Synopsis

Retail industry has always been a pioneer in using Analytics to sell more, reduce cost of goods sold, and enhance customer experience. About 20 years ago, the retail industry in the U.S. started gravitating from a product-centric view of the world to a customer-centric view, and moved towards a more personalized, “segment of one” approach. It has taken leaps and bounds in providing exceptional customer experience, at the same time, cutting costs dramatically. In this highly competitive landscape, and with dwindling margins, the need to cross and up sell to existing customers and figuring out what items to promote (or not) to attract customers, and increase margins, has only grown stronger.

This course will lay out one of many ways to understand customer purchase behavior by looking at past retail transactions (store and/or online) and the collection of items that come together (think “association”) in a market basket (think “receipt”). This Market Basket Analysis (also known as Affinity Analysis and the technique called Association Rule Mining) is used to determine the likelihood of these items occurring together. This discovery of products and services being purchased together is used to identify specific items to be sold to specific customers, and help in increasing the customer’s lifetime value (CLTV).

Thus, retailers (and other industries) can use the knowledge and discovery about associations to

- Increase cross and up-sell of products and services
- What Items to promote or not
- How to Improve loyalty and retention “stickiness”
- How to place products (both in brick-and-mortar stores or online)
- Product bundling options
- How to Optimize supply chain (new items, not-so-selling items, perishables to determine bundling etc.)
- Right “Next Best Offer” to right person and optimize marketing spend
- What Brands to promote or not

With the help of MS-Excel exercise and easy-to-understand examples, and some small R code, we will quickly demonstrate how a data mining algorithm along with retail data can be really leveraged to make a positive difference to business outcomes.

Who Should Attend

This course would be of interest to marketing professionals in any industry. Specifically, in the retail industry, professionals who can benefit include advertising and promotion managers, merchandising managers, store managers, consultants, and financial analysts.

Prerequisites

Please bring your laptop to the workshop.

Tools:

- a) MS Excel or any other spreadsheet program,
- b) Language R,
- c) An IDE for R called R Studio.

R is free, and can be installed by downloading from

<https://cran.r-project.org/>

After installing R, a free version of R Studio can be downloaded from

<https://www.rstudio.com/products/rstudio/download/>

Where

CBA Events Room (CBA 3.304), Red McCombs School of Business, University of Texas, Austin.

When

Friday, January 22nd 2016.

To Register

https://mcombs.qualtrics.com/jfe/form/SV_4HP9hahy2sDY0wl

Workshop Agenda

Time	Description	Speaker
8.30 – 9.00 am	Breakfast & Networking	
9.00 – 9.15 am	Introductions & Welcome	Dr. Rajiv Garg
9.15 – 10.30 am	<ol style="list-style-type: none"> 1. Course Overview and Objectives 2. Retail Industry Trends 3. Analytics in Retail 	Ajay Bhargava
10.30 – 10.45 am	Break	
10.45 – 12.00 pm	<ol style="list-style-type: none"> 4. Association Rule Mining - Concepts, Goal, Strategy 5. Apriori Algorithm – Concepts, Example 6. Other Types of AR-Mining Algorithms 	Ajay Bhargava
12.00 – 1.00 pm	Lunch	
1.0 – 2.30 pm	<ol style="list-style-type: none"> 7. Hands-on MS-Example 8. Hands-on R-Code 	Ajay Bhargava
2.30 – 2.45 pm	Break	
2.45 – 3.45 pm	<ol style="list-style-type: none"> 9. Business Outcomes & Applications – Retail Examples 10. AR-Mining Applications in other industries 11. Summary 	Ajay Bhargava
3.45 – 4.00 pm	Closing Remarks	Dr. Ramesh Rajagopalan

Speaker Bio



Ajay Bhargava

As CEO of Analytics Advisory Group, [Ajay](#) specializes in transforming organizations to be more “analytics driven” in serving their customers. He has more than 27 years of industry, research, and teaching experience in the areas relating to databases, enterprise data management, data warehousing, business intelligence, operations research, advanced analytics (data and text), and Big Data. He has also contributed to SQL, ODBC and IDAPI database standards. Over the years, he has provided business and technology oriented strategic thinking, advising, management consulting, and built customer-centric solutions for large multi-M\$ initiatives for global Fortune 1000 customers across multiple industries.

From 2010 till 2014, Ajay incubated and built the Global Analytics & Big Data practice for [TCS](#) Insurance & Healthcare (CxOs) customers. His role was to build analytics-driven organizations and [IP-based](#), market differentiating [solutions](#) for TCS Customers to derive actionable value and outcomes. Prior to this, he headed their global Enterprise Data Management (Data Architecture, Data Quality, MDM, Data Governance, Metadata Management, and Data Security) practice.

Ajay has frequently spoken at industry [conferences](#), authored [whitepapers](#), [articles](#), and has driven thought leadership [globally](#) in the Data industry to prospects, customers, [industry groups](#), analysts, [peers](#), and [academia](#). He has also won numerous industry accolades and [awards](#).

Ajay has been an [Adjunct Faculty at The University of Texas](#) (Analytics, Database Design, and Data Mining etc.) and give back to the community. He has also [taught](#) in the McCombs School of Business and guest-lectured in Graduate level classes in Executive MBA & Data Mining courses. He has also taught in College of Engineering, Pune in India teaching Advanced Database Design, Data Warehouse, and Data Mining courses.

Ajay is a TOGAF certified enterprise architect, and holds an M.S. in Computer Science and M.S. in Aerospace Engineering from [The University of Texas at Arlington](#). He obtained his B.Tech in Aeronautical Engineering from [Indian Institute of Technology \(I.I.T.\), Mumbai](#), in 1984.