Preface

Data Science is an extremely important domain in today's data-driven world where 90% of the data has been created in the last 2 years alone. Scientists examine large amounts of data to uncover hidden patterns, correlations, and insights. With today's technologies, it's possible to analyze a huge amount of data and get answers from it almost immediately. It is more efficient and faster compared to traditional business intelligence solutions. Thus, data science is booming, and so is data analytics. Data analyst is then assigned to help organization to make better business decisions. This can fall under the purview of cutting down costs, increasing the returns coming from marketing initiatives, advising corporate management on entering new geographies, make newer product launches, and so forth. A data analyst in a large organization can even play the role which is specific to what he does in the organization: so, a data analyst in a Fortune 500 company may go by the name of financial analyst, sales analyst, operations analyst, marketing analyst, chief data officer, and so on.

Social media is one such domain that has increased the growth rate of the data. Data available from social media is an example of how new digital technologies provide businesses with a more comprehensive understanding of the consumer. Social media has become embedded in nearly every sphere of life. News stories circulate social media channels side-by-side business promotions and everyday sentiments of users. Daily actions and interactions are recorded and collected so that one can discover information such as what the target audience is talking about and what the wider trends of the day are. More specifically, how are they interacting with the company? Are they sharing or liking or negative about what was posted?

Social media is just one field of digital disruption that is generating more data to draw intuition from. How economic transactions occur has been digitized to such an extent that one can analyze not only consumer's interaction with marketing and news but also how and when they act after liking or sharing a company's promotion, tracking of consumers, telling about who they are interacting with and what is attracting them. This list goes on.

With exponentially increasing amounts of data accumulating day-by-day in real-time, there may be no reason why one should not turn it to a competitive advantage. While machine learning, driven by advancements in artificial intelligence, has made great strides, it has not been able to surpass several challenges that still prevail in the way of better success. Such limitations as the lack of better methods, urge for deeper understanding of problems, and need for advanced tools are hindering progress. For example, memory-augmented neural networks require read/write access to a large working memory to discover facts, store, and avail them transparently. Similarly, achieving natural language processing and understanding content are still lacking drastically. Object detection, correct identification, localization and search, image classification and semantics, semantic segmentation, and enabling neural networks to learn using much fewer examples may as well be recounted.

Thus, the proposed title for this book focuses on prevailing challenges in data analytics and its application on social media like WWW, Facebook, Twitter, blogs, e-commerce, e-service, and similar social outlets. Social media involves various interactive Web 2.0 Internet-based applications, user-generated content, digital photos or videos, and data generated through all online interactions, user-created service-specific profiles created by users of websites or applications. Among all of the possible interactions, e-commerce, e-education, e-health and various other prevailing e-services have been identified as important domains for application of analytics techniques. So, this book focuses on various machine learning and deep learning techniques in improving practice and research in such e-X domains in social realm.

Prevailing knowledge and research issues in the following are being covered through contributed authors of specific field expertise:

- Introduction to data analytics,
- AI, deep learning, machine learning applications;
- Cloud computing, edge computing, and social media;
- Social media use cases for individuals and organizations;
- Challenges of Internet- and cloud-based IoT applications, and edge computing;
- (Social/) Big data issues: gathering, governance, GDPR, security, and privacy;
- Data analytics practice using tools & languages, Python, R, so on;
- Machine and deep learning techniques in IoT and cloud;
- Data cleaning, reduction, and visualization techniques and tools;
- Applications of data analytics in emerging fields;
- Emerging trends in data analytics: explainable AI, natural language processing (NLP), predictive and augmented analytics, dark data, continuous intelligence, data fabric, persistent memory servers …

With Regards

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