Advanced Data Analysis

**Course Description**

This course introduces several advanced analytics subjects of practical relevance. The subject areas covered span from business performance measurement and analytics, text mining, and web- and social media analytics to current trends in experimental design and setup. Along this journey, topics such as the design of key performance indicators (KPIs), business process analytics, word frequency and semantic analysis, data science on clickstreams, social media interactions, and multi-armed bandit testing are addressed.

**Contents**

1. Business Performance Analytics
   1. KPI Design Considerations
   2. Common Business Performance Indicators
   3. Business Process Mining
2. Text Analytics
   1. Word and Document Frequency (TF-IDF)
   2. Semantic Analysis
3. Web Analytics
   1. Web Metrics
   2. Clickstream Analytics
   3. Recommender Systems
4. Social Network Mining
   1. Introduction to Social Media Analytics
   2. Mining Common Social Media Platforms
5. Testing and Experimentation
   1. Practical A/B Testing
   2. Multivariate Tests
   3. Multi-Armed Bandit Testing