

Data Science projects

1. Using machine learning to achieve consonance in social media content

<https://www.linkedin.com/pulse/using-machine-learning-achieve-consonance-social-changrani-mba/>

<https://www.slideshare.net/vishalchangrani/building-a-model-to-quantify-image-and-music-correlation-for-an-artificial-intelligence-based-recommendation-service>

The objective of the project was to create a recommendation engine to produce a continuous stream of combinations of social media content such as images, music, tweets etc. from disparate sources in a way that amplified the consonance between them. This was a completely self-driven project where I conceptualized the idea, studied existing research in this field, created and ran a survey to collect data and then used ML techniques to create a model.

Techniques & Tools: Unsupervised hierarchical clustering, Random Forest, Python Pandas, Scikit, Librosa, Seaborn, Jupyter notebook, Lime survey.

2. Outbrain Click Prediction (Kaggle)

<https://www.slideshare.net/vishalchangrani/outbrain-click-prediction-by-vishalchangrani>

This was my capstone project for the Springboard DataScience Intensive certification. The goal of the project was to build a model to predict which of the ads displayed by Outbrain had the most likelihood of being clicked. I cleansed the given data, went through several iterations of data exploration and feature selection, built a model using the Random Forest classifier and performed hyper-parameter tuning. The results were presented to my mentor and a panel of accomplished data-scientist and was very well received.

Techniques & Tools: Random Forest, Python Pandas, Scikit, Matplotlib, Seaborn, Jupyter notebook, Kaggle discussion forum, Amazon spot instances.

3. Patent - Smart Data Cap Avoidance with Personalized Predictions Based on Linear Regression or Historical Usage Alpha-Generation Patterns

<https://patents.google.com/patent/US20180013629A1>

As part of the research in bandwidth management I did at Ericsson in my role as Senior Research Engineer, I proposed the idea of using machine learning for predicting future internet data usage by a subscriber. I built a Linear regression model using past-data usage as training data and developed a prototype of the end-to-end solution. The idea was converted to a patent application.

Techniques & Tools: Linear regression, Python, Pandas.

MOOC

1. Data Science Intensive course - Springboard (Mar 2017)
A 100-hour online Data Science workshop that covers Python, Machine Learning, and Data Storytelling with one-on-one mentorship from a data science expert.
<https://www.springboard.com/workshops/data-science-intensive-course/>
2. R Programming - Coursera (Sept 2014)
This course covers how to use & program in R for effective data analysis. It covers practical issues in statistical computing: programming in R, reading data into R, accessing R packages, writing R functions, debugging, profiling R code, & organizing and commenting R code.
<https://www.coursera.org/learn/r-programming>
3. Web Intelligence And Big Data - Coursera (June 2013)
This course is about building 'web-intelligence' applications using machine-learning and parallel map-reduce programming to analyze 'big data' such as arising from social media or genomics.
<https://www.mooc-list.com/course/web-intelligence-and-big-data-coursera>

Graduate courses as part of MBA - Emory University

1. Data and Decision Analytics
The course introduced the concepts of descriptive and inferential statistics and their use in managerial decision making.
https://community.bus.emory.edu/program/PreBBA/Shared%20Documents/350_Data%20Decision%20Analytics_Miller_Sp16.pdf
2. Marketing Analytics in Excel
The course objectives were - find, extract, organize and describe data, quantify possible relationships and uncertainty, develop spreadsheet models to analyze data and evaluate risk and optimize decisions and justify a course of action.
https://goizueta.emory.edu/degree/one_year_mba/curriculum/concentrations_electives/marketing_analytics.html
3. Analytics for e-markets
Pricing/analytical strategies in high-tech industries (mobile networks, software, video games, music, advertising and social media).
<https://community.bus.emory.edu/dept/ISOM/Lists/Courses/DispForm.aspx?ID=38&ContentTypeId=0x0104002CED45892D16834DBDC26B81A02376B6>

4. Product and Brand Management

This course was designed for both marketing specialists and generalists. It introduced the contemporary challenges faced by a broad variety of firms in creating, maintaining, and managing brand equity over both the short and long term. This includes segmenting the market, positioning brands to appeal to an identified consumer target, differentiating the brand from competition, developing the annual brand plan and its associated brand strategies and tactics, measuring brand performance, and developing and launching new products.

<https://community.bus.emory.edu/dept/Marketing/Lists/BBA%20Course%20List/DispForm.aspx?ID=7&ContentTypeId=0x01000A92245BDF70C741817648EB39DC8344>