Course Description

- Consumer Analytics is a growing field that spans industry boundaries, but is rapidly evolving within the health care industry. This class delves into the parallel world of consumer analytics as it pertains to personalization and digital marketing as opposed to the separate domain of clinical analytics and bioinformatics. Patient utilization history and claims data are being used to drive wellness health programs, website search histories are used to under patient behavior better and give recommend at right time. Healthcare consumers now have more access to information many companies are engaged in direct-to-consumer marketing, patients can look up quality outcomes for their provider, and medication instructional videos are now on YouTube. Held on 3 consecutive Saturdays for 8 hours per day, this micro mini course will highlight the data sources and insights used by providers, payers and tech companies to understand and influence consumer behavior. Students will gain insight into the ML algorithms such as recommendation engines, marketing analytics, personalization and explore specific use cases alongside industry experts. Topics will also include evaluation of such technologies and privacy and ethical implications of collecting and utilizing health data.
- This is an introductory course on US healthcare data and applications of consumer (i.e. non clinical) analytics. This course will help lay the foundation of your healthcare data journey and provide you with the knowledge and skills necessary to work in the healthcare industry as a data analyst/scientist. Healthcare is unique because it is associated with continually evolving and complex processes associated with health management and medical care. We'll learn about the many facets to consider in the US healthcare system and have case study discussions with industry experts along the way.
- We'll discuss the various types of healthcare data and assess the complexity that occurs as you work with pulling in all the different types of data to aid in decisions. We'll cover different categories of healthcare data and describe the terminology / standards to organize it to facilitate computation. We'll discuss the common clinical representations of data in healthcare systems, including ICD-10, SNOMED, LOINC, drug vocabularies (e.g., RxNorm), and clinical data standards. Students will familiarize themselves with the role of ethics in healthcare analyses and HIPAA Privacy - and unintended consequences of analytics and discuss the framework to consider the implications.
- We'll cover the developing trends via disruptive technologies and new data sources and applications. We'll discuss case studies with industry leaders and experts.
- We'll cover the common ML algorithms used in consumer analytics in healthcare and how to evaluate them

Day 1 (Feb 17, 2024)

Module 1: Introduction to US healthcare system and challenges for analysts

Module 2: Health Information literacy for data analysts

- Healthcare data terminology: Common data standards (ICD9/10, SNOMEDCT, CPT, LOINC) and Information exchange standards (HL7v2, FHIR 3 ("fire"), DICOM, CCD),
- **Healthcare Data sources** (Clinical, Administrative / Claims, Prescription, Genomics)
- Data providers/suppliers in the industry and their comparison

Day 2 (Feb 18, 2024)

Module 3: Developing trends and disruptive applications of consumer analytics in healthcare (telemedicine, voice data, patient centricity). Case studies of healthcare consumer analytics

Day 3 (Feb 24, 2024)

Module 4: Ethical & Regulatory considerations in consumer analytics in healthcare

Module 5: ML algorithms and their Evaluation