**REVISED ASSIGNMENT DESCRIPTION for INFO296A-2: Thought Leaders in Data Science and Analytics**

The assignment has two components described below:

1. **Weekly bullet points or write-ups on the seminars and/or panels by speakers or the instructors**, or associated white papers or other papers or books you read or are assigned (15 points):
   1. Mandatory: Identify whether the following points were covered in the talk and how they were or were not addressed (while bearing in mind the 6 step process):
      1. The firm’s position in the industry segment and against the overall industry and industry segment landscape
      2. The firm’s approach for financial growth and profitability, and how analytics specifically enables this
      3. Landscape of analytics and their current and changing role in the specific firm, as well as the industry segment (or sector) it is in, e.g. banking, financial services, online advertising etc.
      4. The competitive positioning of the firm**+ the business needs requiring analytics**
      5. How was as an analytics capability developed? What infrastructure was required?
      6. How were the major analytics needs identified? How were the solutions gaps identified?
      7. How was a solution approach developed in include:

1. Models & Algorithms 2. People 3. Organizations 4. Deployment 4. Validation

* + 1. How was the data obtained?
    2. How was the date pre-processed and for what purpose (e.g. aggregation, cleansing)
    3. Identify each specific issue and the associated algorithm
    4. How much did the algorithmic approaches entail the:
       1. Use of existing standard algorithms available easily in open source form (e.g. books, web, etc.), or from vendors? Note: We use “commodity” algorithms to denote these.  
          If “commodity” algorithms were used, how were they learnt, used, and how much of data UIs, pre-processing, aggregation, fusion, etc. was required
       2. Combination of existing algorithms in a creative, novel way
       3. Development of brand new algorithms or approaches (e.g. PageRank)
       4. Development of a new business model
    5. Other insights or highlights
    6. Other insights or highlights that you have obtained by dint of additional thinking, reading, or discussion

**IMPORTANT NOTE:** Please be VERY crisp. Short, on-point answers will receive more credit, while verbose, rambling, defocused answers will receive zero or negative credit. Either terse but clear sentences or bullet points will suffice. Submissions can range from half a page to two, but must not exceed two pages. Please add additional material separately, if you have something special to share.

1. **Weekly, monthly, and end of quarter Project Report submissions**

The objective is to submit a report and PPTS by 4/27, 11:59 pm, which will incorporate the following elements\*:

* 1. 2/14, 11:59 pm: Identify (Single line answer)
     1. The focus of your report, from one of the three following categories
        1. Business opportunity (in a large or medium firm, using its capabilities)
        2. Entrepreneurial opportunity (in a startup or small firm)
        3. Research or analytic problem solving in a business or startup (research or industry project e.g. coordinated with INFO296A-3: Advanced Project course or INFO290- Data and Business Analytics)
     2. The elements of a report (5 pages, 5 points) that would go into identifying
        1. A clear business problem, need, opportunity, or issue with significant strategic value and monetary potential if solved, in the category and context you have chosen
        2. The industry (segment, sector, and competitive) landscape to provide context for this business problem, need, issue, or opportunity
        3. The current solution gap in meeting this need:
        4. The components and solution process, including timeline, of addressing or meeting this problem opportunity, need, or issue.
        5. The components and solution process to include:
           1. Clear problem or opportunity statement in an Analytics context
           2. State of the art research and technology, gaps, and emerging and novel mathematical and other techniques and approaches to address these
           3. The business need and **gap in ability to meet the need, in terms of lacking Computing and Data Infrastructure and Platforms (e.g, Hadoop for Big Data), Data, and Algorithms (and Interfaces)**
           4. The data required and issues of data collection and processing, including appropriate business models
           5. The algorithmic needs in an inputs (data) and output (results) sense
           6. Identifying whether standard (“off-the-shelf” or “commodity” algorithms will suffice, or additional interfacing is required.  
              Is creative integration of “commodity” algorithms required?  
              Development of new algorithms?
           7. Identify standard algorithm components, including unsupervised (e.g clustering, Principal Components), supervised (e.g. classification, prediction), optimization (business analytics), Reinforcement Learning
           8. The prevailing business model, or new business model to be created or assumed, for the analytics solution to lead to growth and profit
           9. Use any industry segment or sector you would like to use at this time, for the purpose of this specific assignment
  2. 2/28, 11:59 pm: Identify (5 page answer, 5 points)
     1. An industry section or segment for your report: e.g. Banking and Financial Services, Online advertising and computational marketing services, healthcare, energy.
     2. Specialize the answers of the previous step (of 2/15) to this specific industry section or segment
  3. 3/20, 11:59 pm: Update previous report, modify, and expand (10 pages, 5 points)
  4. 4/10, 11:59 pm: Update previous report, modify, and expand (15 pages, 15 slide PPT, 10 points)
  5. 4/26, 11:59 pm: Final report – Update, modify, expand previous report, present (20 pages - range 15-25 pages, , 40 points, 20 slide PPT in 15 minutes – 10 points)

**CLASS PARTICIPATION (10 POINTS)**- Based on inputs consistent with those required for the assignments  
- Anything special, unique, or distinctive that students can provide in terms of insights, understanding, and action in the context of analytics for business

**Grades**

10% class participation, very short bullet point highlights of talks, and interaction; 90% on weekly (15%), monthly (25%), and final submission of reports (40%), and PPT presentations (10%). Crisp, insightful, analytic reports will receive higher points.

ORIGINAL DESCRIPTION

**Class Report/Project**

1. Given a business/data analytics problem, decompose overall problem and solution into standard components, including unsupervised (e.g clustering, Principal Components), supervised (e.g. classification, prediction), optimization (business analytics), Reinforcement Learning etc.

2. Identify in a talk, or in reading a mathematical/technical or white paper, the analytics used to solve a given business  problem, which use the commodity algorithms, versus those which adapt or combine these commodity algorithms in a novel way, or create novel algorithms.

3. For a given industrial research project, or analytic product/service, or entrepreneurial concept/product/service, identify both an analytic approach or methodology gap, and a creative way in which the gap can be met. Also, identify the business model which will result in financial success.

**Grades**

10% class participation, very short bullet point highlights of talks, and interaction; 90% on weekly (15%), monthly (25%), and final submission of reports (40%), and PPT presentations (10%). Crisp, insightful, analytic reports will receive higher points.