PGP in AI & ML Capstone Project

Objective

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➢ Demonstrate your understanding and mastery

➢ Integrate what you've learned over various courses

  ➢ Use a combination of tools and techniques

➢ Understand trade-offs that need to be made when solving a problem

➢ Practice the analytical problem solving methodology

Teams

➢ Form your teams and inform program office
   ➢ Teams by 19th September
   ➢ Teams of four

➢ Ensure balanced teams
   ➢ Mix of skills
   ➢ If you're experienced in the field, include someone fresh to the field

➢ Collaboration
   ➢ Resist temptation to 'just do it myself'
   ➢ Don't freeload

Topics

- ➢ Three options
  - ➢ Projects within your organizations
    - ➢ Propose what you'd do for your team/manager rather than ask
    - ➢ Get approval from your company
    - ➢ Establish yourself as an expert at your workplace
  - ➢ Self-selected project
    - ➢ An area in which you're keen on working
    - ➢ Open-ended problems can throw up major challenges. So, be realistic about what you can accomplish (mentor can help)
  - ➢ Curated projects
    - ➢ Select one from our curated list of projects
    - ➢ Curated project topics is shared with you
- ➢ Inform program office of your topic choice
  - ➢ Mentors will review and give feedback if they have suggestions

Proposal

➢ **Immediately after your team and topic are submitted, you will be introduced to your mentor**
  - ➢ Check in with your mentor to get inputs on feasibility
  - ➢ Refine proposal with mentor's input

➢ **What you will do and how**
  - ➢ The proposal should include a proposed plan to action

➢ **Submit a 1-page proposal to program office**

➢ **Capstone evaluation committee**
  - ➢ Will review your proposal and give feedback / propose changes if any
  - ➢ Will approve for your team to proceed by 28th October

Interim Report

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- ➢ Important milestone to stay on track
  - ➢ Get interim report approved by mentor prior to submitting
- ➢ Progress to date
  - ➢ Data challenges and approach
  - ➢ Exploratory analysis (and results)
  - ➢ Initial model building efforts
  - ➢ Challenges foreseen (+ steps to overcome them)
- ➢ Capstone evaluation committee
  - ➢ Will review your interim report and give feedback

Final Report & Presentation

➢ Final report

- ➢ Share report with mentor by atleast one week in advance to ensure timely feedback
- ➢ Reviewed and approved by mentor prior to submission
- ➢ Analysis results + code submission (Github)
- ➢ Start preparing final presentation

➢ Project presentations

- ➢ All team members expected to participate in presentation

➢ Format & expectations can be found in course page

Evaluation

➢ Proposal: 10 points

➢ Submission: 60 points

    ➢ Interim report

    ➢ Final report

    ➢ Analysis results + code

➢ Project presentation: 30 points

Guidelines

- ➢ Incrementally 'build' a solution
  - ➢ Source & structure of data
  - ➢ Exploratory data analysis
  - ➢ Initial model building
  - ➢ Model evaluation
  - ➢ Suitability of one or more models + tuning
  - ➢ Even if you are using a manageable subset of the data, logically extend the applicability to larger data
  - ➢ Move model to big data
- ➢ You are solving an analytical problem first & foremost
  - ➢ Big Data in service of analysis
- ➢ Select data sources suitable for Big Data tools
  - ➢ Large data stores and/or
  - ➢ Real time evaluation
- ➢ Minimum quality criteria
  - ➢ Project outcome should be published in a national/international conference
- ➢ Project updates
  - ➢ Every week updates to your mentor
  - ➢ Biweekly updates to program director

Sample projects

➢ Case Outcome Prediction (Legal Studies)

➢ Document Summarization

    ➢ Judgement summarization

    ➢ News summarization

➢ Document Similarity

    ➢ Similar judgements identification

    ➢ Similar news items identification

➢ Online Image Identification using Deep Learning Techniques

➢ Recommendation System

➢ Real-time Sentiment Analysis

➢ Airline Delay and Cancelation Forecast

➢ Taxi Demand Forecast

➢ etc…

Thanks!