Final Project

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Objectives:

1. Teach specific and interesting relating to Data, information, Data Science, and Databases, that hasn't been covered and practice your presentation skills.

Pretend you have been given the assignment to give a presentation for peers at a company. Select one of the listed topics and prepare a short lesson(9-11 minutes) which you will present to the class through recorded video on the discussion. The lesson should include why the topic is an important part of the training for data science, any procedures or tools they should know about, and some resources for where people could go to learn more. This needs to be an extension of what we covered in class or a new topic. You may NOT just rehash a lesson from term. NO videos in your presentation(i.e no recording someone else speaking for 10min and playing that as your presentation. Video must be YOU presenting. You don't need to show your face, but no AI may be used)! Your topic and presentation must center around data science.

None of these topics should be treated as invitations to be rude to anyone. All topics should be covered in a non-biased manner. Focus on the data and data science, not your point of view on the topic. Even Politics! Turn in your PowerPoint, video and a report including your sources, you need at least 5, and a CRAP reliability checklist/paragraph for each source. Presentations derived from disreputable sources will not receive credit. You should use the same CRAP/CRAAP checklists you've been using in your labs.

You may NOT pick the same topic as another student. Whoever claims the topic first gets it.

Choose from the following topics

1. Predictive Analytics in Healthcare: Exploring the use of data analytics to predict patient outcomes and optimize healthcare delivery.

2. Ethical Considerations in Data Science: Discussing ethical dilemmas and best practices in data collection, analysis, and dissemination.

3. Big Data and Urban Planning: Analyzing how big data is used to improve city infrastructure, transportation systems, and urban development.

4. Cybersecurity Threat Detection Using Machine Learning: Examining how machine learning algorithms can enhance cybersecurity by detecting and preventing cyber threats.

5. Data Visualization Techniques: Exploring different data visualization methods and their effectiveness in communicating complex information.

6. Social Media Analytics: Investigating how social media data is analyzed to understand user behavior, sentiment analysis, and trend prediction.

7. Climate Change Modeling: Discussing the use of data science and climate models to study and predict the impacts of climate change.

8. Fraud Detection in Financial Transactions: Analyzing techniques for detecting fraudulent activities in financial transactions using data analytics.

9. Natural Language Processing Applications: Exploring applications of natural language processing (NLP) in sentiment analysis, language translation, and chatbots.

10. Data-driven Marketing Strategies: Examining how businesses leverage data analytics to personalize marketing campaigns and target specific customer segments.

11. Customer Churn Prediction: Investigating techniques for predicting customer churn and strategies for customer retention using data analytics.

12. IoT Data Analytics: Discussing the challenges and opportunities of analyzing data generated by Internet of Things (IoT) devices.

13. Supply Chain Optimization: Analyzing how data analytics can optimize supply chain management, reduce costs, and improve efficiency.

14. Spatial Data Analysis: Exploring techniques for analyzing spatial data, including geographic information systems (GIS) and spatial statistics.

15. Data Mining in Healthcare: Discussing applications of data mining techniques to extract insights from healthcare data for disease diagnosis and treatment.

16. Predictive Maintenance in Manufacturing: Investigating how predictive analytics is used to anticipate equipment failures and minimize downtime in manufacturing processes.

17. Sentiment Analysis in Product Reviews: Analyzing sentiment analysis techniques to understand customer opinions and feedback from product reviews.

18. Deep Learning Applications: Exploring applications of deep learning techniques such as neural networks, convolutional neural networks (CNNs), and recurrent neural networks (RNNs).

19. Data-driven Decision Making in Education: Discussing how data analytics is used to improve educational outcomes, personalize learning experiences, and identify at-risk students.

20. Data Privacy and Protection Laws: Examining data privacy regulations such as GDPR, CCPA, and their implications for businesses and individuals.

21. Blockchain Technology and Data Integrity: Exploring how blockchain technology ensures data integrity, transparency, and security in various industries.

22. Quantum Computing and Data Science: Discussing the potential impact of quantum computing on data analysis, optimization, and cryptography.

23. Data Journalism and Investigative Reporting: Analyzing how data journalism utilizes data analysis techniques to uncover stories, trends, and patterns in news reporting.

24. Data-driven Decision Making in Sports: Investigating how data analytics is used in sports for player performance analysis, game strategy optimization, and fan engagement.

25. Humanitarian Data Analysis: Discussing how data analytics is used in humanitarian efforts, disaster response, and refugee management.

26. Personalized Medicine and Genomic Data Analysis: Exploring how genomic data analysis enables personalized treatment plans and precision medicine approaches.

27. Data Ethics in AI and Machine Learning: Examining ethical considerations in the development and deployment of AI and machine learning models, including bias, fairness, and accountability.

28. Predictive Policing and Crime Analysis: Analyzing how data analytics is used in predictive policing to forecast crime hotspots, allocate resources, and prevent criminal activities.

29. Data-driven Environmental Sustainability: Discussing how data analytics is used to address environmental challenges, monitor pollution levels, and promote sustainable practices.

30. Data Governance and Data Management Practices: Exploring best practices for data governance, data quality management, and data stewardship within organizations.

31. Data Science in Political Campaigns: Investigating how data analytics is used in political campaigns for voter targeting, messaging optimization, and campaign strategy.

32. Text Mining and Document Analysis: Analyzing techniques for extracting insights from unstructured text data, including document clustering, topic modeling, and sentiment analysis.

33. Data-driven Approaches to Disaster Preparedness: Discussing how data analytics is used to predict and mitigate the impact of natural disasters, such as earthquakes, hurricanes, and wildfires.

34. Data-driven Design and User Experience (UX): Exploring how data analytics informs user experience design decisions, usability testing, and product optimization.

35. Data Sovereignty and International Data Regulations: Examining the concept of data sovereignty and the implications of international data regulations on cross-border data transfers and data localization requirements.