

---

Postgraduate Certificate in Data-Driven Science Journalism

## Data Storytelling

---

Data Storytelling is a crucial skill in the field of Data-Driven Science Journalism as it allows journalists to effectively communicate complex information to a wider audience. In this course, we will explore key terms and vocabulary related to Data Storytelling to help you become a proficient data storyteller.

**Data Visualization:** Data visualization is the graphical representation of data and information. It enables journalists to present data in a visual format that is easier to understand and interpret. Examples of data visualization include charts, graphs, maps, and infographics.

**Exploratory Data Analysis (EDA):** Exploratory Data Analysis is the process of analyzing and visualizing data to gain insights and identify patterns. EDA helps journalists understand the structure of the data and uncover interesting trends that can be used to tell a compelling story.

**Data Cleaning:** Data cleaning is the process of identifying and correcting errors or inconsistencies in a dataset. It is essential to ensure the accuracy and reliability of the data before using it for analysis or visualization.

**Data Wrangling:** Data wrangling refers to the process of transforming and preparing raw data for analysis. This may involve cleaning, reshaping, and combining data from multiple sources to make it suitable for visualization and storytelling.

**Descriptive Statistics:** Descriptive statistics are numerical summaries that describe the main features of a dataset. They include measures such as mean, median, mode, and standard deviation, which help journalists understand the distribution and characteristics of the data.

**Statistical Inference:** Statistical inference involves drawing conclusions about a population based on a sample of data. It allows journalists to make predictions and generalizations about a larger group based on the analysis of a smaller subset.

**Hypothesis Testing:** Hypothesis testing is a statistical method used to determine whether there is enough evidence to reject a null hypothesis in favor of an alternative hypothesis. It helps journalists assess the significance of their findings and draw valid conclusions from the data.

**Correlation:** Correlation measures the strength and direction of the relationship between two variables. It is often represented by a correlation coefficient, which ranges from -1 to 1. A coefficient close to 1 indicates a strong positive correlation, while a coefficient close to -1 indicates a strong negative correlation.

**Causation:** Causation refers to the relationship between cause and effect. While correlation indicates a connection between variables, causation implies that changes in one variable directly lead to changes in another. Establishing causation requires careful analysis and consideration of potential confounding factors.

**Machine Learning:** Machine learning is a branch of artificial intelligence that uses algorithms to analyze data, learn from patterns, and make predictions or decisions without explicit programming. It enables journalists to uncover insights from large datasets and automate certain tasks in data analysis.

**Supervised Learning:** Supervised learning is a type of machine learning where the model is trained on labeled data. The algorithm learns to map input data to the correct output based on examples provided during training. Classification and regression are common tasks in supervised learning.

**Unsupervised Learning:** Unsupervised learning is a type of machine learning where the model is trained on unlabeled data. The algorithm explores the data to find patterns, clusters, or associations without predefined outcomes. Clustering and dimensionality reduction are examples of unsupervised learning techniques.

**Natural Language Processing (NLP):** Natural Language Processing is a branch of artificial intelligence that focuses on the interaction between computers and human language. NLP enables journalists to analyze and generate text-based data, extract insights from articles or social media, and automate tasks such as sentiment analysis and text summarization.

**Deep Learning:** Deep learning is a subset of machine learning that uses artificial neural networks to model complex patterns in large datasets. Deep learning algorithms, such as convolutional neural networks and recurrent neural networks, have been successful in image recognition, speech recognition, and natural language processing tasks.

**Storytelling Techniques:** Storytelling techniques are strategies and frameworks used to craft a narrative that engages and resonates with the audience. Journalists can employ techniques such as narrative arcs, character development, and emotional storytelling to convey data-driven stories in a compelling and memorable way.

**Data Journalism:** Data journalism is a form of journalism that relies on data analysis and visualization to uncover and communicate stories. Data journalists use data-driven techniques to investigate issues, present evidence, and engage readers in complex topics through interactive storytelling.

**Data Ethics:** Data ethics refers to the moral principles and guidelines that govern the collection, use, and dissemination of data. Journalists must consider ethical concerns such as privacy, consent, bias, and transparency when working with data to ensure that their reporting is fair, accurate, and respectful of individuals' rights.

**Data Literacy:** Data literacy is the ability to read, interpret, and communicate data effectively. Journalists with strong data literacy skills can analyze datasets, identify trends, and present findings in a clear and understandable manner to inform and educate their audience.

**Visualization Tools:** Visualization tools are software applications that enable journalists to create interactive charts, maps, and dashboards to visualize and explore data. Popular tools include Tableau, Power BI, Google Data Studio, and D3.js, which offer a range of features for designing and sharing data visualizations.

**Geospatial Analysis:** Geospatial analysis is the process of analyzing and visualizing data that has a geographic component. It allows journalists to map patterns, trends, and relationships based on location, helping them tell spatially relevant stories and provide context to their reporting.

**Interactive Data Visualization:** Interactive data visualization allows users to explore and interact with data visualizations, such as charts and maps, to gain deeper insights and understanding. Interactive features like filters, tooltips, and animations enhance user engagement and facilitate data exploration.

**Data Storytelling Platforms:** Data storytelling platforms are online tools or services that enable journalists to create, publish, and share data-driven stories. Platforms like Flourish, Datawrapper, and Infogram provide templates, design options, and collaboration features to help journalists produce engaging visualizations and narratives.

**Data Journalism Projects:** Data journalism projects are investigative reports or stories that leverage data analysis and visualization to uncover insights, trends, or anomalies. Projects may involve collecting, cleaning, and analyzing data, as well as presenting findings in a compelling and informative way to inform the public on important issues.

**Data Storytelling Challenges:** Data storytelling challenges are obstacles or difficulties that journalists may encounter when working with data to create compelling narratives. Challenges can include data quality issues, technical limitations, ethical dilemmas, and the need to simplify complex information for a general audience.

**Visual Storytelling:** Visual storytelling is the practice of using images, graphics, and multimedia elements to convey a narrative. By combining visuals with text, journalists can create engaging and memorable stories that resonate with readers and viewers across different platforms.

**Data Interpretation:** Data interpretation is the process of analyzing and making sense of data to extract meaningful insights and draw conclusions. Journalists must interpret data accurately and contextually to tell a coherent and informative story that resonates with their audience.

**Data Visualization Best Practices:** Data visualization best practices are guidelines and principles that help journalists create effective and engaging visualizations. Best practices include choosing the right chart type, using appropriate colors and labels, simplifying complex data, and designing interactive features for user engagement.

**Storytelling Impact:** Storytelling impact refers to the influence and significance of a data-driven story on its audience. Impactful stories can raise awareness, drive action, and promote change by informing, inspiring, or engaging readers in meaningful ways that resonate with their values and beliefs.

**Data-Driven Decision Making:** Data-driven decision making is the practice of using data analysis and insights to inform and guide decision-making processes. Journalists can help organizations, policymakers, and individuals make informed choices by presenting data-driven stories that highlight trends, risks, and opportunities in a clear and compelling manner.

**Data Visualization Techniques:** Data visualization techniques are strategies and methods used to represent data visually in charts, graphs, maps, and other formats. Techniques such as bar charts, line graphs, heatmaps, and scatter plots help journalists communicate data effectively and engage their audience in exploring and understanding complex information.

**Data Storytelling Strategies:** Data storytelling strategies are approaches and frameworks that journalists can use to structure and present data-driven stories. Strategies may include defining a clear narrative arc, framing the story with compelling visuals, and integrating data analysis with contextual information to create a cohesive and persuasive narrative that captivates readers and viewers.

**Storytelling with Data:** Storytelling with data is the practice of using data analysis and visualization to craft a compelling and persuasive narrative. By combining data-driven insights with storytelling techniques, journalists can create stories that resonate with their audience, evoke emotions, and inspire action on important issues.

**Data Presentation Skills:** Data presentation skills are the abilities to communicate data effectively through visualizations, narratives, and interactive tools. Journalists with strong presentation skills can convey complex information in a clear, engaging, and persuasive manner that captures the attention of their audience and delivers key messages with impact.

**Data Storytelling Workshop:** A data storytelling workshop is a training session or event where journalists can learn and practice data storytelling techniques, tools, and strategies. Workshops provide hands-on experience, feedback, and collaboration opportunities to help journalists develop their skills and confidence in telling data-driven stories.

**Data Storytelling Resources:** Data storytelling resources are tools, guides, tutorials, and examples that journalists can use to enhance their data storytelling skills. Resources may include online courses, books, articles, and datasets that provide inspiration, best practices, and practical advice for creating compelling and informative data stories.

**Data Storytelling Portfolio:** A data storytelling portfolio is a collection of data-driven stories, visualizations, and projects that journalists have created to showcase their skills and expertise in data storytelling. Portfolios demonstrate journalists' abilities to analyze data, tell compelling stories, and engage audiences through effective data visualization and storytelling techniques.

**Visual Narrative:** A visual narrative is a sequence of visuals, such as images, charts, and graphics, that together tell a story or convey a message. Journalists can use visual narratives to guide readers through complex information, highlight key points, and evoke emotions through the power of visual storytelling.

**Data Storytelling Workshop:** A data storytelling workshop is a training session or event where journalists can learn and practice data storytelling techniques, tools, and strategies. Workshops provide hands-on experience, feedback, and collaboration opportunities to help journalists develop their skills and confidence in telling data-driven stories.

**Data Storytelling Resources:** Data storytelling resources are tools, guides, tutorials, and examples that

journalists can use to enhance their data storytelling skills. Resources may include online courses, books, articles, and datasets that provide inspiration, best practices, and practical advice for creating compelling and informative data stories.

**Data Storytelling Portfolio:** A data storytelling portfolio is a collection of data-driven stories, visualizations, and projects that journalists have created to showcase their skills and expertise in data storytelling. Portfolios demonstrate journalists' abilities to analyze data, tell compelling stories, and engage audiences through effective data visualization and storytelling techniques.

**Visual Narrative:** A visual narrative is a sequence of visuals, such as images, charts, and graphics, that together tell a story or convey a message. Journalists can use visual narratives to guide readers through complex information, highlight key points, and evoke emotions through the power of visual storytelling.

**Interactive Data Visualization:** Interactive data visualization allows users to explore and interact with data visualizations, such as charts and maps, to gain deeper insights and understanding. Interactive features like filters, tooltips, and animations enhance user engagement and facilitate data exploration.

**Data Storytelling Platforms:** Data storytelling platforms are online tools or services that enable journalists to create, publish, and share data-driven stories. Platforms like Flourish, Datawrapper, and Infogram provide templates, design options, and collaboration features to help journalists produce engaging visualizations and narratives.

**Data Journalism Projects:** Data journalism projects are investigative reports or stories that leverage data analysis and visualization to uncover insights, trends, or anomalies. Projects may involve collecting, cleaning, and analyzing data, as well as presenting findings in a compelling and informative way to inform the public on important issues.

**Data Storytelling Challenges:** Data storytelling challenges are obstacles or difficulties that journalists may encounter when working with data to create compelling narratives. Challenges can include data quality issues, technical limitations, ethical dilemmas, and the need to simplify complex information for a general audience.

**Visual Storytelling:** Visual storytelling is the practice of using images, graphics, and multimedia elements to convey a narrative. By combining visuals with text, journalists can create engaging and memorable stories that resonate with readers and viewers across different platforms.

**Data Interpretation:** Data interpretation is the process of analyzing and making sense of data to extract meaningful insights and draw conclusions. Journalists must interpret data accurately and contextually to tell a coherent and informative story that resonates with their audience.

**Data Visualization Best Practices:** Data visualization best practices are guidelines and principles that help journalists create effective and engaging visualizations. Best practices include choosing the right chart type, using appropriate colors and labels, simplifying complex data, and designing interactive features for user engagement.

**Storytelling Impact:** Storytelling impact refers to the influence and significance of a data-driven story on its audience. Impactful stories can raise awareness, drive action, and promote change by informing, inspiring, or engaging readers in meaningful ways that resonate with their values and beliefs.

**Data-Driven Decision Making:** Data-driven decision making is the practice of using data analysis and insights to inform and guide decision-making processes. Journalists can help organizations, policymakers, and individuals make informed choices by presenting data-driven stories that highlight trends, risks, and opportunities in a clear and compelling manner.

**Data Visualization Techniques:** Data visualization techniques are strategies and methods used to represent data visually in charts, graphs, maps, and other formats. Techniques such as bar charts, line graphs, heatmaps, and scatter plots help journalists communicate data effectively and engage their audience in exploring and understanding complex information.

**Data Storytelling Strategies:** Data storytelling strategies are approaches and frameworks that journalists can use to structure and present data-driven stories. Strategies may include defining a clear narrative arc, framing the story with compelling visuals, and integrating data analysis with contextual information to create a cohesive and persuasive narrative that captivates readers and viewers.

**Storytelling with Data:** Storytelling with data is the practice of using data analysis and visualization to craft a compelling and persuasive narrative. By combining data-driven insights with storytelling techniques, journalists can create stories that resonate with their audience, evoke emotions, and inspire action on important issues.

**Data Presentation Skills:** Data presentation skills are the abilities to communicate data effectively through visualizations, narratives, and interactive tools. Journalists with strong presentation skills can convey complex information in a clear, engaging, and persuasive manner that captures the attention of their audience and delivers key messages with impact.

**Data Storytelling Workshop:** A data storytelling workshop is a training session or event where journalists can learn and practice data storytelling techniques, tools, and strategies. Workshops provide hands-on experience, feedback, and collaboration opportunities to help journalists develop their skills and confidence in telling data-driven stories.

**Data Storytelling Resources:** Data storytelling resources are tools, guides, tutorials, and examples that journalists can use to enhance their data storytelling skills. Resources may include online courses, books, articles, and datasets that provide inspiration, best practices, and practical advice for creating compelling and informative data stories.

**Data Storytelling Portfolio:** A data storytelling portfolio is a collection of data-driven stories, visualizations, and projects that journalists have created to showcase their skills and expertise in data storytelling. Portfolios demonstrate journalists' abilities to analyze data, tell compelling stories, and engage audiences through effective data visualization and storytelling techniques.

**Visual Narrative:** A visual narrative is a sequence of visuals, such as images, charts, and graphics, that

together tell a story or convey a message. Journalists can use visual narratives to guide readers through complex information, highlight key points, and evoke emotions through the power of visual storytelling.

**Data Storytelling Workshop:** A data storytelling workshop is a training session or event where journalists can learn and practice data storytelling techniques, tools, and strategies. Workshops provide hands-on experience, feedback, and collaboration opportunities to help journalists develop their skills and confidence in telling data-driven stories.

**Data Storytelling Resources:** Data storytelling resources are tools, guides, tutorials, and examples that journalists can use to enhance their data storytelling skills. Resources may include online courses, books, articles, and datasets that provide inspiration, best practices, and practical advice for creating compelling and informative data stories.

**Data Storytelling Portfolio:** A data storytelling portfolio is a collection of data-driven stories, visualizations, and projects that journalists have created to showcase their skills and expertise in data storytelling. Portfolios demonstrate journalists' abilities to analyze data, tell compelling stories, and engage audiences through effective data visualization and storytelling techniques.

**Visual Narrative:** A visual narrative is a sequence of visuals, such as images, charts, and graphics, that together tell a story or convey a message. Journalists can use visual narratives to guide readers through complex information, highlight key points, and evoke emotions through the power of visual storytelling.

**Interactive Data Visualization:** Interactive data visualization allows users to explore and interact with data visualizations, such as charts and maps, to gain deeper insights and understanding. Interactive features like filters, tooltips, and animations enhance user engagement and facilitate data exploration.

**Data Storytelling Platforms:** Data storytelling platforms are online tools or services that enable journalists to create, publish, and share data-driven stories. Platforms like Flourish, Datawrapper, and Infogram provide templates, design options, and collaboration features to help journalists produce engaging visualizations and narratives.

**Data Journalism Projects:** Data journalism projects are investigative reports or stories that leverage data analysis and visualization to uncover insights, trends, or anomalies. Projects may involve collecting, cleaning, and analyzing data, as well as presenting findings in a compelling and informative way to inform the public on important issues.

**Data Storytelling Challenges:** Data storytelling challenges are obstacles or difficulties that journalists may encounter when working with data to create compelling narratives. Challenges can include data quality issues, technical limitations, ethical dilemmas, and the need to simplify complex information for a general audience.

**Visual Storytelling:** Visual storytelling is the practice of using images, graphics, and multimedia elements to convey a narrative. By combining visuals with text, journalists can create engaging and memorable stories that resonate with readers and viewers across different platforms.

Data Interpretation: Data interpretation is the process of analyzing and making sense of data to extract meaningful insights and draw conclusions. Journalists must interpret data accurately and contextually to tell a coherent and informative story that resonates with their audience.

Data