MGT 521 : Storytelling with Data Syllabus

Course Information

Course Number: MGT 521
Course Title: Storytelling with Data
Term and Year: Summer 2025

Residence Dates: Residence 5, August 4-8, 2025
Class meeting Time, Day: Refer to TBM Class schedule.
Course support: Available Monday-Friday 8:30 am -5 pm: after hours please contact the TA or Faculty: email somcoursesupport@yale.edu

Contact Information

Professor

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Virtual office hours and review sessions: As needed

Course Material

Readings/Case Studies: See detailed outline in pre-work table.

Software: Excel, Chat GPT via Yale's Clarity Platform. Note there is a short video tutorial for ChatGPT under pre-work assignment 3. You can also check out the Clarity FAQs page. This OpenAI tutorial, and this MIT tutorial are also helpful, but note that the latter is out of date.

Course Description and Objectives

The first goal of this course is to introduce students to the idea that data figures can tell a story. The second goal is to show students how large language models can be used as your own personal data staff in constructing such figures, eliminating the need to learn statistical software. We will start by discussing the figures students bring in as part of the pre-assignment (see below). We will then show how ChatGPT can be used to turn plain-english prompts into figures. As part of that, we will discuss how patterns in data can answer questions, and how to assess whether patterns are meaningful. We will spend any remaining time working through several exercises designed to increase your proficiency at making figures that tell a story.

Grading and Course Expectations

Grading

Your grade will be determined by your completion of the pre-course assignment, and your performance on the post-course assignment.

Academic Integrity

No student's name should appear on a group project if the student has not contributed to the production of the project. The following is an example of unacceptable conduct: Neo agrees to produce a case write-up, putting Trinity's name on the case write-up. Trinity agrees to repay Neo by producing a subsequent assignment on his own.

In group work, all group members are responsible for the integrity of work that is submitted. Group members should always question other members about the source of material and analysis that is being included in group projects. If a group member has any concerns about the integrity of material being submitted by the group, that group member should discuss those concerns with the instructor.

Note that I re-use assignments over time. It is a violation of academic integrity to rely on any work from prior iterations of this or any related course in working on your assignments for this iteration of the course.

Plagiarism

- The members of any academic community are expected not to present ideas or material from other sources as their own. In the context of this course, it is acceptable to, for example:
    - Refer to concepts, frameworks, and analytical tools from the readings or class lectures without citation. For example, you may refer to productivity, the laffer curve, keynesian assumptions, and so on without citing the source.
    - However, it is not acceptable to quote or paraphrase analysis from another source and present it as your own, where "another source" includes current classmates, past students of the course, or AI/LLMs like ChatGPT. There is a difference between consulting a source and then forming your own opinion based on what you have read, and "lifting" material directly.

Yale School of Management Policies

Please see the Yale School of Management Bulletin

Course Recording

All TBM course lectures are recorded with the permission of the Faculty and posted to the specific course site.

Detailed Outline of Class Sessions, Pre-work, and Assignments

Table A: Pre-work

#	Pre-work Assignments or Readings	Date Due
1	There are two steps to this assignment. First please choose two data displays that you've come across in your everyday work life to share with the class. (Please make sure these figures do not contain any confidential data from your school system.) The first figure should be one that you think does a GOOD job telling a story. The second should be a figure that you think is POOR along these lines. Second, please upload the two figures to the "Pre-work Assignment 1" folder in Canvas using the following filename convention: "LASTNAME_FIRSTNAME_#", where # is a randomly assigned order for your figures, either "1" or "2". I'd like them to be in random order so we won't know from the file name whether you thought the figure was GOOD or POOR.	*July 31 at 11:59 pm.*
2	There are 3 steps to this assignment. First, please find some dataset from your everyday work life, or some other dataset that interests you. (Here, too, please make sure that these data do not contain any confidential information from your school system.) Second, please use these data to create a figure that tells a story. You can use any software you like to create the figure, or try using ChatGPT via Yale's Clarity Platform to make a figure. (The next Pre-work Assignment has a short tutorial along these lines.) Third, please upload both the dataset and the figure to the "Pre-work Assignment 2" folder in Canvas by 11:59 July 31, 2025. The naming convention for the figure is "LASTNAME_FIRSTNAME_3". The naming convention for the dataset is "LASTNAME_FIRSTNAME_3_DATA". Please make sure the data file you post is in "csv" or "txt" format. (For example, if your dataset is an excel file, it is either already in this format, or you can save it in that format by choosing that file type when you save.) If you have ANY trouble putting the file into that format, please post the file you have and let me know it needs to be converted.	*July 31 at 11:59 pm.*
3	Please watch the short video I created, "Using ChatGPT to Create a Figure," which provides a brief tutorial showing how ChatGPT (via Yale's Clarity	*August 3 (class session 1)*

#	Pre-work Assignments or Readings	Date Due
	Platform) can be used to create a figure using this dataset on housing prices. (You might also find this OpenAI tutorial and this MIT tutorial helpful, but note that the latter is out of date.) After you successfully create the figure I make in the tutorial, explore other kinds of figures, for example a histogram. Then try to use ChatGPT to do some statistical analysis for you, like running a regression. If you can't get the model to do something right at first, try different ways of stating y our prompt. We will use ChatGPT extensively in Sessions 3 and 4. There is nothing to hand in for this assignment – I'd just like you to try out ChatGPT before we meet in person.	
4	Skim through the book, *Storytelling With Data: A Data Visualization Guide for Business Professionals*. This book is an easy read and provides a nice introduction to creating figures with a message. As you skim through the book, consider which of the suggested practices work for you, and which don't, in preparation for the figures we will discuss in class. Please also go to this **SURVEY** to complete a quick evaluation of what you did or did not learn from it. *Knaflic, Cole. Storytelling With Data: A Data Visualization Guide for Business Professionals, Wiley, © 2015.*	*August 3 (class session 1)*
5	Skim the "*Do No Harm*" guide by Schwabish and Feng, which provides a complementary take on data visualization. As you skim through this guide, consider which of the suggested practices work for you, and which don't, in preparation for the figures we will discuss in class. Please also go to this **SURVEY** to complete a quick evaluation of what you did or did not learn from it.	*August 3 (class session 1,2)*

Table B: In-Residence Week

Session	Topic(s)	Pre-work # above tied to this topic, and/or new reading/assignment*
1	***What makes a good figure good? What makes a bad figure bad? Which data displays are appropriate for which kind of data?*** *The goal of this session is to develop an appreciation for how figures can be designed to convey a message. We will pursue this goal by*	*Pre-course Assignment 1, 4 , and 5*

Session	Topic(s)	Pre-work # above tied to this topic, and/or new reading/assignment*
	reviewing some of the figures you handed in as part of assignment 1, to promote discussion of what makes a figure GOOD or POOR at telling a story. We will then segue into a more general discussion of which types of figures are useful for different types of messages. Throughout, we will seek answers to questions such as: How much text should I include on a figure? How do I use color and texture effectively? What does into the notes of a figure? Etc.	
2	***How can I use ChatGPT as my own personal data staff?*** *In this session we will walk through several examples of how ChatGPT can be used as your own personal data staff. We will discuss the effectiveness of different types of prompts, and try to get a sense of what AI can and cannot do well. We will then have our first in-class assignment, where you (in A- teams) will use ChatGPT to analyze World Bank data to create a figure that tells a story about global income inequality. This session will end with a discussion of the figures you create.*	*Pre-Course Assignment 2, 4, 5*
3	***How can I use ChatGPT as my own personal data staff (cont)?*** *The goal of this session is to give you a chance to apply what you have learned this far in the course to the figures you handed in as pre-work assignment 2. Toward that end, for our second in-class assignment, each A-team will revise one of the pre-work assignment 2 figures created by its members. When we return to class, each group will explain the how and why of their revisions. I will then show how I revised several of the figures you handed in.*	*Pre-Course Assignment 3, 4, 5*
4	***How Can I Tell if Data Patterns are Meaningful?*** *The goal of this session is to give students an intuitive understanding of confidence intervals and statistical significance, and to discuss ways in*	*Pre-Course Assignment 5, Post-Residence Assignment*

Session	Topic(s)	Pre-work # above tied to this topic, and/or new reading/assignment*
	which these objects can enhance (or detract from) a figure.	

Table C: Learning Extension

#	Post-Residence Assignments or Readings	Date Due
1	I will give you a dataset tracking cross-country and time variation in educational management quality during our last in-person meeting. Each A-team will produce a short slide-deck analyzing some aspect of these data that tell an interesting story. Each team will present their slide decks to the whole class when we meet for our virtual class day on Friday August 22, 2025. The analysis (and presentation) is to include at least one test of statistical significance, e.g., a t-test, a regression, etc. The due date for the slide deck is August 21, 2025. Please post your slides no later than 11:59 pm. Further details will be provided when we meet in person in August.	August 21, 2025 at 11:59 pm.