

NYC Subway: Interlined, or Deinterlined?

(COMP3125 Individual Project)

*Note: Do not used sub-title

Given Name Surname
dept. name of organization

Abstract—This electronic document is a “live” template and already defines the components of your paper [title, text, heads, etc.] in its style sheet. ***CRITICAL: Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper Title or Abstract.** (provide a short abstract)

Keywords—example1, example2, example3, example 4, example 5 (provide 3-5 keywords)

I. INTRODUCTION (HEADING 1)

The New York City subway is an interesting beast, created back in the early 20th century to transport commuters throughout the boroughs, to help clear congestion within the city. Several lines were created, primarily running on shared tracks through downtown Manhattan. This is commonly known as interlining, and it has its problems, such as delaying trains if one breaks down within a station, or if the track along the line fails. A single delay on one train line can fan out to delay all the other lines. This brings up the question, how does interlining affect the NYC subway? Does it significantly change the average margins of time that it takes for a train to take its route, end to end? Was interlining the right way for the Metropolitan Transportation Authority (MTA) to go?

II. DATASETS

A. Source of dataset (Heading 2)

In this section, introduce your dataset by explaining its source—where you obtained it and whether it is from a credible provider. Include details such as when the dataset was generated and how it was created by its original author. If you generated the dataset yourself, describe the methods and processes you used.

Example: XXXX

My datasets originate from the MTA itself, on the NY State Govt website. This makes them credible, as they are maintained by the state government, and the MTA itself. They are produced from statistics generated from subway metrics, and originally were produced at the start of 2024 and 2025, as that is the timeframe of available data from when I began this project.

B. Character of the datasets

Describe the dataset's format and size. Additionally, provide an overview of the dataset's characteristics, including its features, size, structure, and any relevant attributes that are important for your analysis. Describe the dataset's format and size, as well as its key features, including the parameters, columns, rows, and character attributes along with their respective units. Using a table to present this information is recommended for clarity. Explain whether you cleaned the data or converted any units, specifying the formulas or rules applied. If multiple datasets were combined, describe how they were merged. Additionally, mention if you created any

new categories for analysis, detailing what they are and how they were generated. Providing this background ensures transparency and helps readers understand the reliability and relevance of your data.

The datasets formats are all CSVs, and contain various columns, but they all shared month, division, and line. One dataset type, the Subway Terminal On-Time Performance dataset, has an included day_type, num_on_time_trips, num_sched_trips, and terminal_on_time_performance.

The Customer Journey Focused Metrics contained a different set, being period, num_passengers, additional_platform_time, additional_train_time, total Apt, total Att, over_five_mins, over_five_mins_perc, as well as the final value of customer_journey_time_performance.

These columns remain the same across beginning 2020 and beginning 2025, but the main difference is for the Subway Terminal dataset, there is 2,686 rows of data in the 2020 dataset while there is only 90 for 2025. This is similar for the Customer Journey dataset, where there is 2,856 rows of data in 2020, compared to the 96 from the 2025 dataset. On top of this, I joined the 2020 and 2025 datasets, and cleaned out any duplicate data, just to make sure that they were not overlapping. The joins create no new columns, and only are to merge the data to be easier to work with on each respective dataset.

III. METHODOLOGY

In this part, you should give an introduction of the methods/model. First, what's the method/model. What's the assumption of this method/model. What's the advantage/disadvantage of this method/model. Why did you choose it. What Python module or function do you apply to apply this method/model. Any optional input/extra work did you adjust to make the results better. If you have multiple methods, feel free to use subsection A., B. to separate them.

Example: Before you begin to format your paper, first write and save the content as a separate text file. Complete all content and organizational editing before formatting. Please note sections A-D below for more information on proofreading, spelling and grammar.

A. Method A

Example: The equations are an exception to the prescribed specifications of this template. You will need to determine whether or not your equation should be typed using either the Times New Roman or the Symbol font (please no other font). To create multileveled equations, it may be necessary to treat the equation as a graphic and insert it into the text after your paper is styled.

$$a + b = \gamma \quad (1)$$

Note that the equation is centered using a center tab stop. Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

B. Method B

- Bulletin 1
- Bulletin 2.
- Bulletin 3

C. Method C

Example: The equations are an exception to the prescribed specifications of this template. You will need to determine whether or not your equation should be typed using either the Times New Roman or the Symbol font (please no other font). To create multileveled equations, it may be necessary to treat the equation as a graphic and insert it into the text after your paper is styled.

$$a + b = \gamma$$

(1)

Note that the equation is centered using a center tab stop. Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

An excellent style manual for science writers is [7].

IV. RESULTS

In this section, present your findings using an appropriate method, such as equations, numerical summaries, or visualizations like charts and graphs. Clearly explain all results and provide guidance on how to interpret them. If any unexpected results arise, discuss possible reasons or contributing factors. To improve clarity and organization, consider using subsections (e.g., A, B) to separate different aspects of your results.

Example: After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

A. Result A

Example: XXX

1) For papers with more than six authors: Add author names horizontally, moving to a third row if needed for more than 8 authors.

2) For papers with less than six authors: To change the default, adjust the template as follows.

- a) Selection: Highlight all author and affiliation lines.
- b) Change number of columns: Select the Columns icon from the MS Word Standard toolbar and then select the correct number of columns from the selection palette.
- c) Deletion: Delete the author and affiliation lines for the extra authors.

B. Results B

Example: Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

C. Results C

a) Positioning Figures and Tables: Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation “Fig. 1”, even at the beginning of a sentence.

TABLE I. TABLE TYPE STYLES

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy ^a		

^a Sample of a Table footnote. (Table footnote)

Fig. 1. Example of a figure caption. (figure caption)

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

V. DISCUSSION

Every method/project has its shortage or weakness. Please discuss the unsatisfied results in your project. And discuss the feasible suggestions of future work to revise/improve your result.

Example: xxx

VI. CONCLUSION

In this part, you should summarize your project. What important results did you find for your topic and what’s the effect of this result on the real-world?

Example: xxx

ACKNOWLEDGMENT (Heading 5)

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression “one of us (R. B. G.) thanks ...”. Instead, try “R. B. G. thanks...”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

REFERENCES

Use the IEEE format for the citation. The template will number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use “Ref. [3]” or “reference [3]” except at the beginning of a sentence: “Reference [3] was the first ...” Unless there are six authors or more give all authors’ names; do not use “et al.”. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [4]. Papers that have been accepted for publication should be cited as “in

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press” [5]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

- [1] G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” *Phil. Trans. Roy. Soc. London*, vol. A247, pp. 529–551, April 1955. (*references*)
- [2] J. Clerk Maxwell, *A Treatise on Electricity and Magnetism*, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
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- [4] K. Elissa, “Title of paper if known,” unpublished.
- [5] R. Nicole, “Title of paper with only first word capitalized,” *J. Name Stand. Abbrev.*, in press.

- [6] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” *IEEE Transl. J. Magn. Japan*, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetism Japan, p. 301, 1982].
- [7] M. Young, *The Technical Writer’s Handbook*. Mill Valley, CA: University Science, 1989.

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