Data Visualisation

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Course Briefing

Contents

- Class Schedule and Venues
- Course Assessment
- Course References
- Brief Course Outline

Instructor

Who is my Teacher?

- Instructor for this Data Visualisation course:

A/P Goh Wooi Boon
(1st Half Instructor)
Course Coordinator

Email: *aswbgoh@ntu.edu.sg*

Ast/P Wang Yong
(2nd Half Instructor)

Email: *yong-wang@ntu.edu.sg*

Class Schedule

When to Show Up?

- Classes allocated for **Tuesday** (**3.30pm** - 5.20pm) and **Friday** (**2.30pm** - 4.20pm).

at **LT19A**

- Tutorials (face-to-face)
- Problem discussion

at **LT19A**

- Lectures (face-to-face)

Course Assessment

What are the Graded Components?

	Weightage
• **Project (Video presentation)**	35%
• **Critique the presentations**	15%
• **Mid-semester quiz**	25%
• **Final quiz**	25%
Total	100%

Assignments

- Assignment instructions and report templates can be found in the **Assignment** folder in NTULearn.

Project

Putting Skills and Knowledge into Creative Practice

- Use a case study example (dataset) of your choice.
- Investigate, explore, design and develop appropriate data visualisation to share about the hidden insights within the data.

Components

- **Presentation** - short video presentation (≈ 5 mins max) using appropriate data visualisation techniques to deliver visual narrative of data insights.
- **Summary Report** – to highlight project objectives, novel contributions, technical challenges and contributions (2-page limit max, inclusive of references).

Critique The Presentations

Having A Critical Eye

- We learn by looking at how other people have done good and effective visualisation of their dataset.
- Being critical and **constructive** show our mastery of the subject.
- Each student will be given **two random presentations** to critique. A written report* (with both +ve and –ve criticisms) is to be submitted for each presentation. **One** will be **randomly** selected for **grading**.
- The anonymous critiques will be made available to the respective presenters for you to **learn from your peers**.

* (4-page limit, inclusive of references and figures).

Mid-semester Quiz

Gauge what you have learnt in the 1st half

- A mid-semester quiz will be given after the recess week to evaluate how well you have grasped the concepts taught in the **first half** of the semester (excluding Interactive Visualisation).
- Quiz will be done in week #9.
- Duration will be 1.0 hours.
- Format of quiz to be communicated at a later date.
- **Checkpoint** - Your general grade for the mid-semester quiz will be revealed to you to help you gauge your understanding so far.

Final Quiz

Wrapping up all that you have learnt

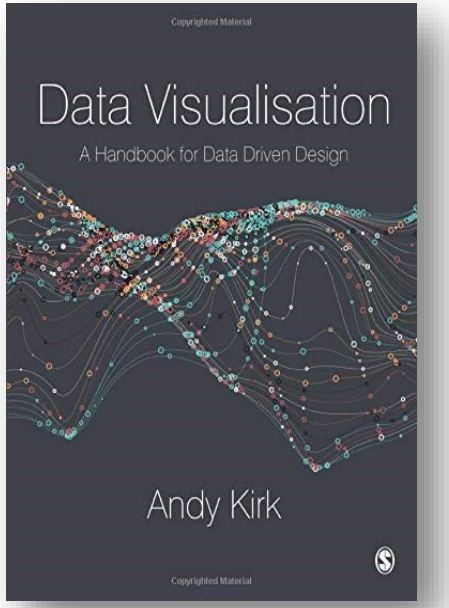
- A final quiz will be given at the end of the course to evaluate how well you have understood the concepts taught in the **2nd half** of the semester (including Interactive Visualisation).
- Quiz will be done in week #13.
- Duration will be 1 hour.
- Format of the quiz will be communicated to you at a later date.

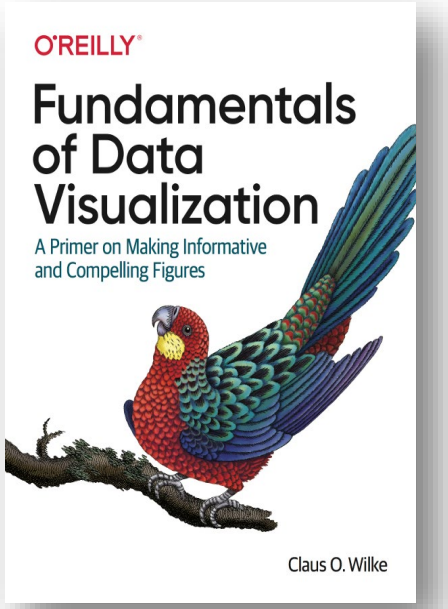
Quiz Schedule | **Weeks #13**

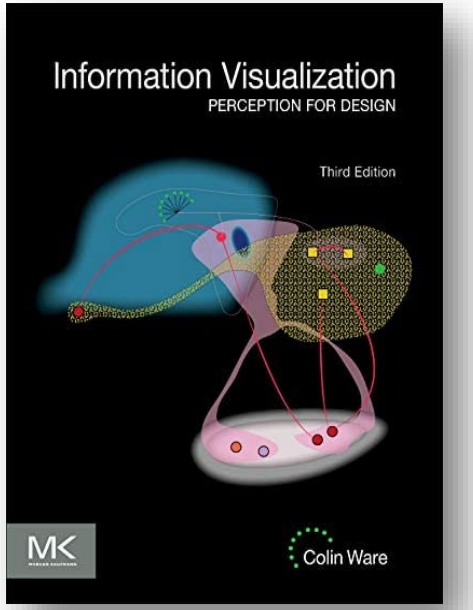
Course References

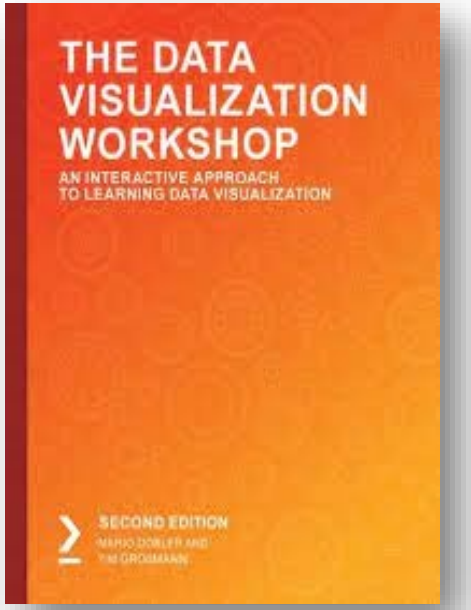
Where Can I Learn More?

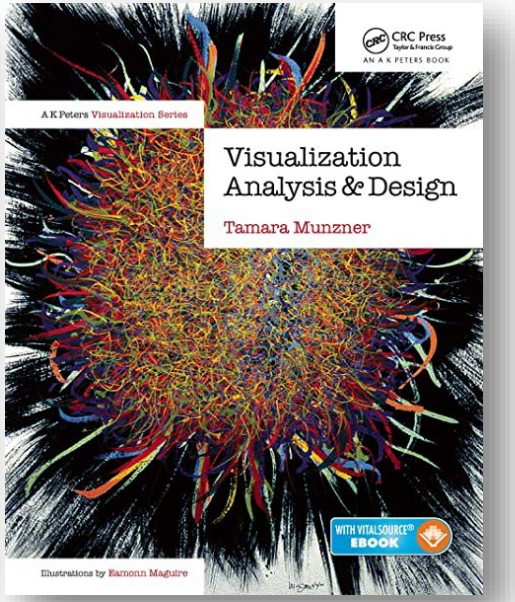
- Many **textbooks** have been referenced in this course.
- Including useful and interesting **weblinks**, blogs and online references.











Just a small sample of the textbooks cited in the course

Course References

Where Can I Learn More?

- Many **textbooks** have been referenced in this course.
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Accessing course references

- Relevant references have been inserted[1] into the lecture notes for you to read or consult further.
- Some of the **textbooks** are available online through **NTU OPAC**.
- **Web**-based references are **clickable**, so you can get there directly from the lecture notes.

[1] Goh Wooi Boon, Data Visualisation Lecture Notes - https://ntulearn.ntu.edu.sg

References for Visual Encoding and Deconstruction

[1] Bertin's quote from: J. Bertin, graphics and graphic information processing (1981) - https://books.google.com.sg/books?id=csqX_xnm4tcC&printsec=copyright&redir_esc=y#v=onepage&q&f=false

[2] T. Munzner, Visualization Analysis & Design, CRC Press (2015)

[3] J. Mackinlay, Automating the Design of Graphical Presentation of Relational Information (1986), https://research.tableau.com/sites/default/files/p110-mackinlay.pdf

[4] C. Ware, Information Visualization: Perception for Design, 3rd Edition, Morgan Kaufmann (2013),

[5] William Playfair's image can be found at: https://upload.wikimedia.org/wikipedia/commons/5/52/Playfair_TimeSeries-2.png

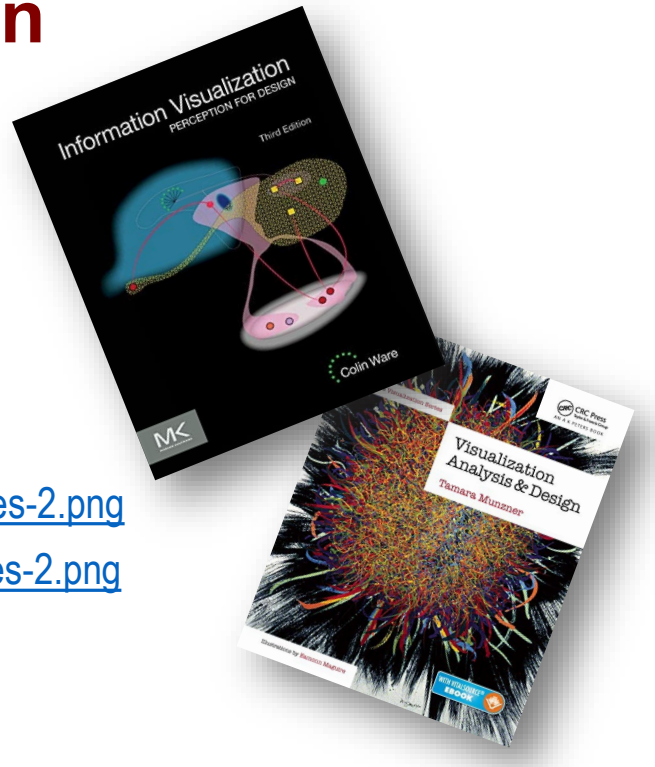
[6] William Playfair's image can be found at: https://upload.wikimedia.org/wikipedia/commons/5/52/Playfair_TimeSeries-2.png

[7] Martin Wattenberg's Map of the Market details can be found at: http://www.bewitched.com/marketmap.html

[8] Ben Fry's website for Salary vs Performance: https://benfry.com/salaryper

[9] Keating & Kirk's Middle East Friendship Chart at: http://www.slate.com/blogs/the_slatest/2015/10/06/syrian_conflict_relationships_explained.html

[10] Duch et al.'s visualisation described in this paper: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0010937



An Example

Brief Course Outline

What Will You Learn?

- Data Attributes and Wrangling
- Visual Encoding
- Basic Plots and Charts
- Visual Perception
- Designing the Visualisation

Mid-semester Quiz Coverage

Covered by
A/P Goh Wooi Boon

- Interactive Visualisation
- Exploratory Data Analysis
- Geospatial Visualisation
- Visualisation of Abstract Data
- Visualisation of Scientific Data

Final Quiz Coverage

Covered by
Ast/P Wang Yong

Course Briefing

The End