

DATA VISUALISATION

Training by Andy Kirk

2-day workshops

TRAINING OBJECTIVES

The two-day training workshops aim to provide delegates with an accessible and comprehensive understanding of the subject of data visualisation: how to effectively communicate data visually.

The focus of the training is to teach the craft of this discipline, helping delegates to know *what* to think, *when* to think and *how* to think about all the analytical and design decisions involved in any data-driven communication. There are four key learning aims for these workshops:

To **challenge** your existing thinking about creating and consuming visualisation works, helping to clarify your convictions about what differentiates good from bad visualisation design.

To **enlighten** you with an appreciation of the wide range of analytical and design options, including chart types, features of interactivity, annotation, colour applications, and composition.

To **equip** you with an efficient design process giving you the confidence to make astute choices based on sound principles and practical guidelines.

To **inspire** you to elevate your ambitions, by broadening your visual vocabulary and exposing you to contemporary techniques.

THE APPROACH

The training is structured around a proven design process. Across the session delegates will build up, stage by stage, a detailed understanding of all the different aspects of decision-making that goes into any data visualisation project, whether for one-off or recurring works.

The content is delivered through a vibrant blend of teaching, discussion, and group practice. The practical exercises vary in nature from evaluating work, conceiving ideas, and forensically assessing design choices.

The approach to teaching this subject is not framed around specific tools or applications. Across the session there will be references for some of the most common, contemporary technologies but the emphasis is on the underlying craft, regardless of your tools or skills.

Materials will be issued digitally (e.g. Dropbox/USB flash drive) covering all teaching content, exercise files and useful resources. Attendees are required to bring fully-charged laptops to use as a convenient workspace for the session. The only software requirements are Excel, a browser and pdf reader: no other technical or skill-based prerequisites exist.

TRAINER PROFILE

Andy Kirk is a UK-based data visualisation specialist: design consultant, training provider, lecturer, author, speaker, researcher, and editor of the award-winning visualisingdata.com. Since becoming a freelancer in 2011, Andy has delivered over 260 public and private training events across 26 countries. Recent clients include Spotify, Google, EU Council, and CERN. He has held visiting lecturing roles at MICA (USA) and Imperial College (UK), and will commence teaching at UCL (UK) in 2020. He is the author of three books, with the most recent title published in July 2019 by Sage, 'Visualising Data: A Handbook for Data Driven Design (second edition)'. Andy also provides data visualisation services to Arsenal F.C.

WHO SHOULD ATTEND?

Nearly 6,000 people have attended these workshop sessions with delegates come from all backgrounds, organisation types and domain areas: they are intended for and useful for any participant demographic.

You might be an analyst, statistician, or researcher looking to enhance the creativity and impact of your communications. Perhaps you possess creative flair, as a designer or developer, and you're seeking to enhance the rigour of your data-driven capabilities? Maybe you do not personally get involved in the analysis or presenting of data but manage others who do?

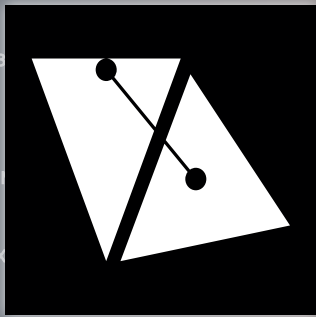
We are all frequent consumers of data visualisations in our daily lives, via media and through the workplace, whether we realise or not, so improving the sophistication of how one reads, interprets and evaluates the effectiveness of such displays is a key literacy.

Above all, the most critical attribute is your curiosity - an instinct for and interest in discovering and sharing insights from data - and your appetite to find a fresh approach to communicating data through visual representation and presentation. Finally, you should be willing to contribute to and learn from discussions during class exercise activities and do so in a respectful and constructive manner.

TOPICS COVERED

An indicative agenda for the workshop is provided over the page. The training content, its sequencing, and the session's rhythm is constantly being refined to optimise the impact of the teaching. The final itinerary and precise times presented may therefore evolve. Here is an outline of the main topics that will be covered in these workshops:

- Defining data visualisation and other related design activities
- Overview of a process-driven approach for efficiency and effectiveness
- The key principles of good data visualisation design
- The role of consuming and creating in sophisticated visualisation literacy
- The influence of contextual requirements and circumstances
- Understanding the ingredients of the 7-hats of visualisation
- Profile of some of the key visualisation tools, applications and libraries
- Overview of useful tutorials using the 'chartmaker directory'
- A landscape of contemporary techniques and styles of visualisation work
- Assessing the physicality and meaning of your data
- Using visual techniques to explore data
- The components of editorial thinking
- The data visualisation design anatomy
- The building blocks of data encoding
- The spectrum of different chart types and their roles
- The features and role of interactivity in visualisation design
- The role of effective annotation for assistance and insight
- Colour theories and best practice applications
- The architectural considerations for composing a visualisation work



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DAY ONE

- 9:30 WELCOME TO DAY ONE
Overview of the workshop
- 9:50 INTRODUCTION
Defining data visualisation
Exercise 1 – Instinctive critical evaluations | Discussion
- 11:00 BREAK
- 11:20 THE VISUALISATION DESIGN PROCESS
Exercise 2 – Decision forensics | Discussion
Introducing the ‘game of decisions’
The three principles of good visualisation design
- 11:50 STAGE 1: FORMULATING YOUR BRIEF
Exercise 3 – What information do you need? | Discussion
Context: Curiosity, circumstances
Vision: Purpose, ideas
- 12:20 *Project 1 – Formulating your brief*
- 12:45 LUNCH
- 13:45 STAGE 2: WORKING WITH DATA
Four steps towards developing intimacy with your data
Exercise 4 – Visualising the Olympics (1/3)
- 14:40 *Project 2 – Working with data*
- 15:05 BREAK
- 15:25 STAGE 3: ESTABLISHING EDITORIAL THINKING
Defining editorial thinking
The three editorial perspectives
Exercise 5 – Visualising the Olympics (2/3)
- 15:50 *Project 3 – Editorial thinking*
- 16:10 STAGE 4: DEVELOPING YOUR DESIGN SOLUTION
A profile of key tools, applications and libraries
Exercise 6 – Ways of showing data | Discussion
- 16:50 WRAP-UP & REVIEW
- 17:00 FINISH

DAY TWO

- 9:30 WELCOME TO DAY TWO
Review of day one, preview of day two
- 9:35 4.1: DATA REPRESENTATION
Visual encoding and the gallery of chart types
Influencing factors and considerations
Exercise 7 – Visualising the Olympics (2/3) | Discussion
- 11:00 BREAK
- 11:20 *Project 4.1 – Data representation*
- 11:40 4.2: INTERACTIVITY
Techniques for interactivity in data visualisation
Influencing factors and considerations
Exercise 8 – Forensic critical evaluations (1)
- 12:20 4.3: ANNOTATION
Features of annotation in data visualisation
Influencing factors and considerations
Exercise 8 – Forensic critical evaluations (2)
- 12:45 LUNCH
- 13:45 *Project 4.2 – Interactivity & Annotation*
- 14:10 4.4: COLOUR
Applications of colour in data visualisation
Influencing factors and considerations
Exercise 8 – Forensic critical evaluations (3)
- 14:40 BREAK
- 15:00 4.5: COMPOSITION
Decisions about composition in data visualisation
Influencing factors and considerations
Exercise 8 – Forensic critical evaluations (4) | Discussion
- 15:45 *Project 4.3 – Colour & Composition*
- 16:10 *Project Final – Group presentations | Discussion*
- 16:50 WORKSHOP WRAP-UP
Final review and Q&A
- 17:00 FINISH