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COURSE BROCHURE

# Advanced Statistical Visualisation and Data Storytelling Training Course

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Registered in the United Kingdom and Saudi Arabia

# Advanced Statistical Visualisation and Data Storytelling Training Course

Statistical Visualisation and Data Storytelling is a 2-week advanced training course for analysts and researchers who present test results to decision makers, and each participant builds a Statistical Visual Reporting Pack pairing every result with a chart and narrative. Leaders increasingly act on evidence they cannot inspect themselves, so how a confidence interval or regression effect is drawn and explained shapes the decision taken. Jupiter Prime Training delivers this course for evidence-focused analysts.

## Why Statistical Visualisation and Data Storytelling Matter Now

Three forces shape this subject. Survey, experiment and operational datasets have grown, so analysts now produce dozens of tests where they once produced a handful. Senior readers have less time and more dashboards, which rewards charts that state a finding plainly and punishes ambiguous ones. Open-source languages such as R and Python now sit beside SPSS, giving analysts more charting power and more ways to mislead by accident. Organisations that present uncertainty honestly avoid costly overreactions to noise; those that do not chase false signals. The course rests on the Cross-Industry Standard Process for Data Mining CRISP-DM, especially its data understanding and evaluation phases.

## Who Gains Most from Statistical Visualisation and Data Storytelling

- Analysts who run hypothesis tests and regressions for business or policy questions
- Researchers responsible for survey, trial or experiment reporting
- Reporting specialists who design statistical dashboards for senior readers
- Evaluation officers who must explain whether an intervention made a difference
- Insight leads who review colleagues' charts before publication

A research or insight unit gains most when several analysts attend together and adopt one chart style sheet and one reporting template.

## Statistical Visualisation and Data Storytelling Capabilities

Participants move from pasting default software output into slides towards evidence displays that a non-statistician can read correctly at a glance.

- Specify the right inferential test and effect size for each analytical question — research sponsors
- Build reproducible statistical charts in R, Python and SPSS from shared style sheets — reporting teams
- Apply visual encoding principles to remove distortion and clutter — senior readers
- Design charts that show uncertainty through intervals, fan charts and funnel plots — risk-aware decision makers
- Communicate findings through headlines, annotations and narrative arcs — executive audiences

- Assess colleagues' reports for misleading scales, missing caveats and unsupported claims — insight leads

## Key Statistical Visualisation and Data Storytelling Terms

- Effect size — a standardised measure of how large a difference or relationship is, independent of sample size.
- Confidence interval — a range of plausible values for an estimate, reflecting sampling uncertainty at a stated confidence level.
- Visual encoding — the mapping of data values to visual properties such as position, length, angle or colour.
- Small multiples — a series of similar charts sharing axes, letting readers compare many groups quickly.
- Funnel plot — a chart plotting rates against sample size with control limits, separating genuine outliers from chance variation.
- Data storytelling — structuring analytical findings into a sequence of context, evidence and implication that readers can act on.

## Statistical Visualisation and Data Storytelling Day by Day

### Day 1: Why Statistical Evidence Gets Misread

- Audience Decision Mapping — Matching Statistical Outputs to What Readers Must Decide
- Common Misreadings of Significance — Correcting P-Value and Correlation Myths
- Reporting Standards for Uncertainty — Deciding How Intervals Are Shown
- CRISP-DM Data Understanding — Framing Exploration Around a Stated Question
- Reproducible Analysis Scripts — Choosing R, Python or SPSS for Each Task

### Day 2: Exploratory Statistics in Practice

- Distribution Shapes and Summary Measures — Choosing Medians, Means or Trimmed Means
- Outlier Diagnosis With Boxplots and Z-Scores — Keeping or Excluding Extreme Cases
- Correlation Matrices and Scatterplot Grids — Screening Relationships Before Modelling
- Missing-Value Patterns — Selecting Deletion or Imputation Strategies
- Exploratory Notebooks in R and Python — Recording Every Exploratory Step

### Day 3: Inferential Testing Choices

- Hypothesis Test Selection Trees — Picking T-Tests, ANOVA or Non-Parametric Alternatives
- Chi-Square Tests for Categorical Outcomes — Comparing Rates Across Segments
- Effect Sizes and Confidence Intervals — Reporting Practical Rather Than Merely Statistical Significance
- Multiple Comparison Corrections — Controlling False Discoveries Across Many Tests
- Power and Sample Size Calculation — Deciding Whether a Study Can Answer

## Day 4: Regression and Model Visuals

- Linear and Logistic Regression Output — Translating Coefficients Into Plain Statements
- Coefficient Plots and Marginal Effects — Showing Driver Strength Visually
- Residual Diagnostic Charts — Spotting Violated Assumptions Before Reporting
- Interaction Plots — Explaining When One Factor Changes Another's Effect
- SPSS Output Interpretation — Extracting Reportable Figures From Default Tables

## Day 5: Visual Encoding Principles

- Pre-Attentive Attributes — Using Position, Length and Colour Deliberately
- Chart Selection Frameworks — Matching Comparison, Distribution, Composition and Relationship Questions
- Colour Palettes for Sequential and Diverging Data — Supporting Colour-Blind Readers
- Axis, Scale and Baseline Choices — Avoiding Truncated or Distorted Impressions
- Clutter Reduction and Direct Labelling — Raising the Data-to-Ink Ratio

## Day 6: Charting Uncertainty and Distributions

- Error Bars and Interval Bands — Showing Precision Without Overwhelming Readers
- Violin, Density and Ridgeline Plots — Comparing Full Distributions Across Groups
- Small Multiples — Comparing Many Segments on Shared Scales
- Forecast Fan Charts — Communicating Spread Around Projected Values
- Funnel Plots for Rates — Separating Real Outliers From Small-Sample Noise

## Day 7: Statistical Graphics in R, Python and SPSS

- ggplot2 Grammar of Graphics in R — Building Layered, Reusable Chart Templates
- Matplotlib and Seaborn in Python — Producing Publication-Ready Statistical Figures
- SPSS Chart Builder Customisation — Exporting Consistent Report Graphics
- Shared Chart Style Sheets — Keeping Fonts, Colours and Annotations Uniform
- Scripted Figure Regeneration — Refreshing Every Chart When Data Change

## Day 8: Data Storytelling Structures

- Narrative Arcs for Analytical Findings — Ordering Context, Tension and Resolution
- Headline Writing for Charts — Stating the Finding Instead of the Variable
- Annotation and Callout Techniques — Directing Attention to the Decisive Point
- Executive Summary Layouts — Leading With the Answer and Supporting Evidence
- Caveat and Limitation Statements — Keeping Stories Honest About Uncertainty

## Day 9: Reports and Dashboards for Decision Makers

- Statistical Report Templates — Structuring Methods, Results and Implications Sections
- Dashboard Layout Hierarchies — Placing Key Indicators Before Supporting Detail
- Interactive Filtering and Drill-Down — Letting Readers Explore Without Misreading
- Accessibility Checks for Visual Reports — Serving Screen Readers and Low Vision
- Peer Critique Protocols — Testing Whether Charts Answer the Intended Question

## Day 10: Practising the Statistical Visual Reporting Pack

- Public Health Survey Case — Applying Chi-Square Tests and Funnel Plots
- Retail Pricing Experiment Case — Applying ANOVA, Effect Sizes and Interval Charts
- Workforce Attrition Case — Applying Logistic Regression and Coefficient Plots
- Briefing Rehearsal to Senior Readers — Testing Headlines, Caveats and Annotations
- Statistical Visual Reporting Pack — Completing Paired Results, Charts and Narratives

## Applying Statistical Visualisation and Data Storytelling After the Course

- Rebuild one recurring statistical report with finding-led chart headlines, interval displays and a limitations box, then compare reader questions before and after.
- Publish a shared ggplot2 or Seaborn style sheet with colour-blind-safe palettes for every analyst in the unit.

## Statistical Visualisation and Data Storytelling Questions FAQ

### What is statistical visualisation and data storytelling, and why does it matter now?

It is the craft of turning statistical test results into accurate charts and clear narratives that decision makers can act on. It matters now because analysts run more tests than ever, while readers have less time to question a misleading axis or an unexplained p-value.

### Which roles gain most from statistical visualisation and data storytelling training?

Analysts, researchers, evaluation officers and reporting specialists gain most. You benefit if you present survey, experiment or performance results in sectors such as public health, retail, education or financial services and need readers to draw the right conclusion.

### How does statistical visualisation and data storytelling differ from a general data analysis methods course?

It concentrates on presenting statistical evidence rather than choosing analytical methods alone. A methods course widens your technique toolkit; this subject adds visual encoding, uncertainty charts, scripted graphics in R, Python and SPSS, and narrative structure for decision makers.

### What do you bring back from statistical visualisation and data storytelling training?

You bring back a set of paired test results, charts and short narratives for a real dataset, plus a reusable chart style sheet and report template your colleagues can adopt immediately.

## Statistical Visualisation and Data Storytelling: The Way Forward

The Statistical Visual Reporting Pack first settles which tests, charts and caveats a recurring report will carry. Analysts, researchers and insight leads use it to agree templates, style sheets and review checks. After its first publication, reader feedback on headlines and uncertainty displays deserves another look, because the questions readers still ask show where the story remains unclear.