

Data Visualization

Course Content

Lesson 1 - Fundamentals of Data Visualization

- Why visualization matters
- Perception and cognitive principles
- Data types and chart choices

Lesson 2 - Choosing the Right Chart

- Comparing types of visualizations
- Pie, bar, line, scatter, boxplots
- Avoiding misleading visuals

Lesson 3 - Color Theory and Design Principles

- Color palettes
- Accessibility considerations
- Consistency in design

Lesson 4 - Using Matplotlib and Seaborn

- Plotting basics
- Statistical plots
- Customizing plot aesthetics

Lesson 5 - Interactive Dashboards with Plotly

- Plotly express
- Interactive elements
- Dash framework overview

Lesson 6 - Data Storytelling Techniques

- Narrative structures
- Annotation and highlighting
- Call to action

Lesson 7 - Visualizing Time-Series Data

- Time aggregation
- Rolling averages
- Seasonality and trends

Lesson 8 - Geographic and Geospatial Visualizations

- Choropleths
- Maps with Folium
- GeoJSON handling

Lesson 9 - Visual Analytics Best Practices

- Dashboards for decision-making
- Data ink principle
- Chart junk reduction

Lesson 10 - Case Studies in Visualization

- Exploratory vs explanatory visuals
- Critique of bad examples
- Building a portfolio

Capstone Project

- Create a storytelling-based dashboard using real-world data.