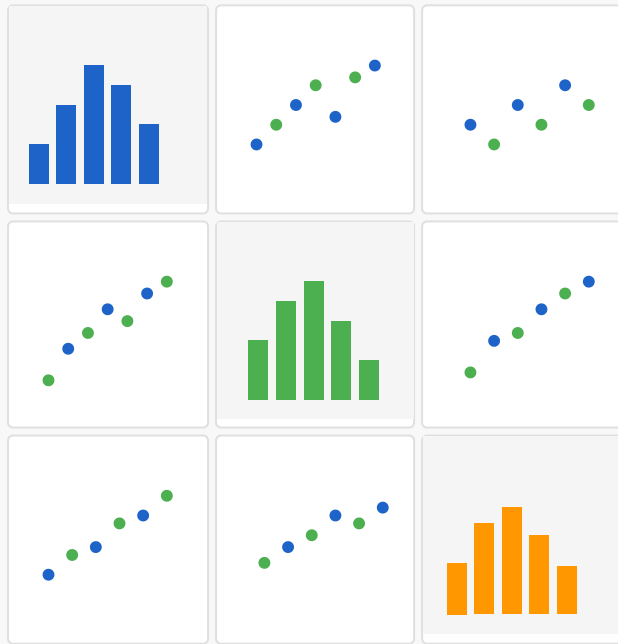# Visualizing Feature Interactions
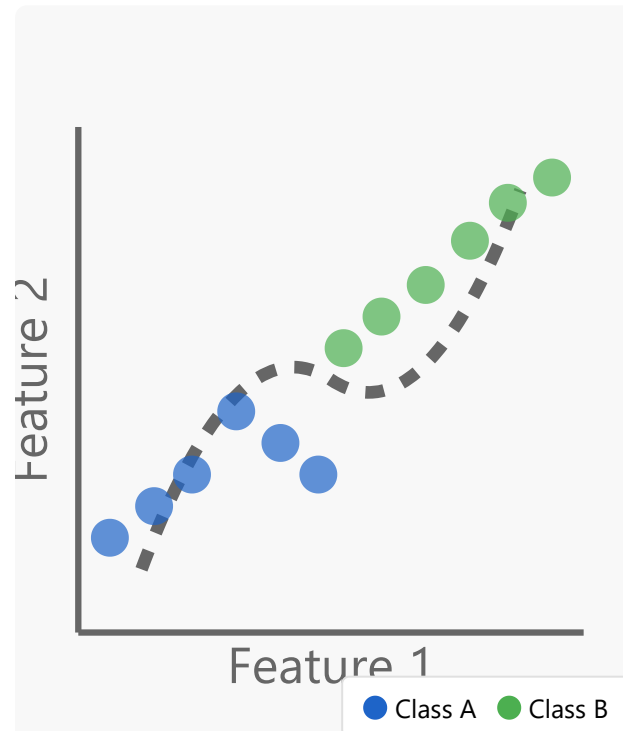
Understanding How Features Jointly Affect Target

Scatter Plot Matrix

All pairwise relationships

Interaction Plot

Feature 2

Feature 1

● Class A ● Class B

Non-linear decision boundary

🔬 Methods

- Pairplot: All relationships
- Interaction: Joint effects
- Contour: Response surface
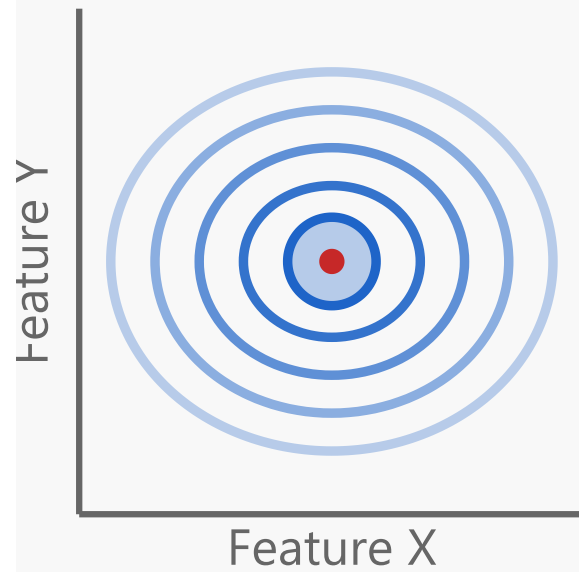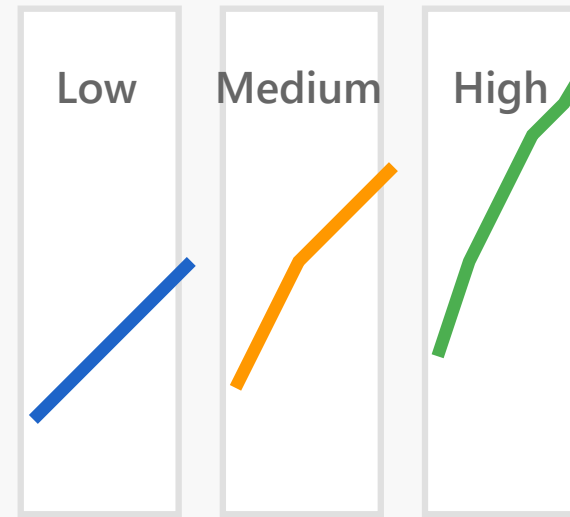- Conditional: Fixed features

💡 Key Insights

▸ Color-encode target variable

▸ Reveal discriminative patterns

Contour Plot

Conditional Plot

Response surface visualization

Low Medium High

Fixed feature conditions

▸ Identify non-linear interactions
▸ Feature crosses for new space

✓ **Best Practices**
✓ Use stratification
✓ Separate by categories
✓ Explore feature crosses
✓ Catch what linear models miss