

Feature Engineering Meets Automation Techniques

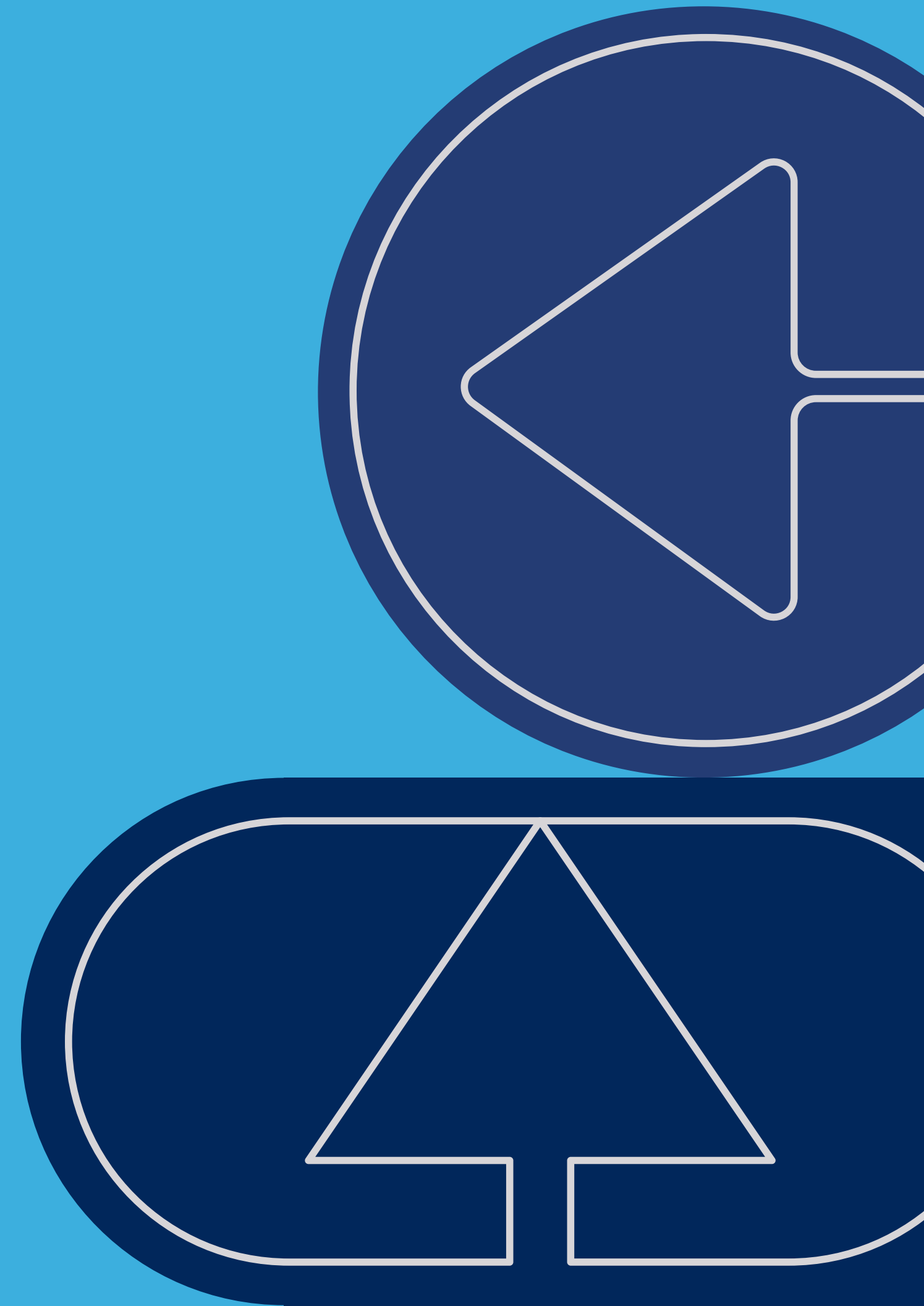
Integrating learning across domains for advanced data analysis strategies



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Feature Engineering

STREAMLINING
DATA PROCESSING



Transfer Learning

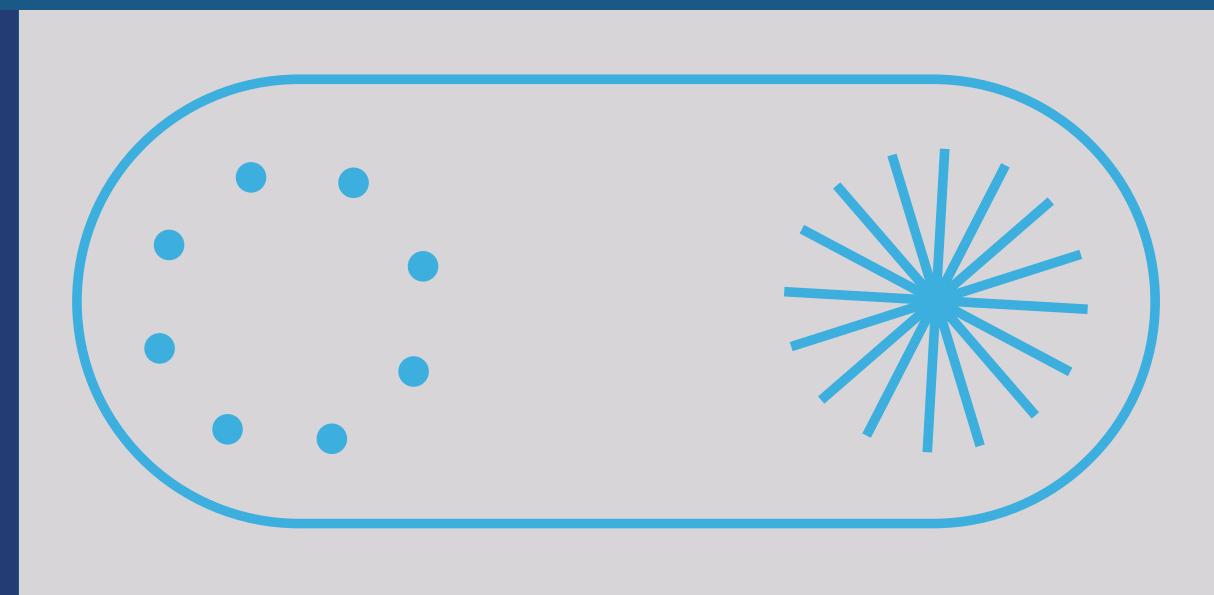
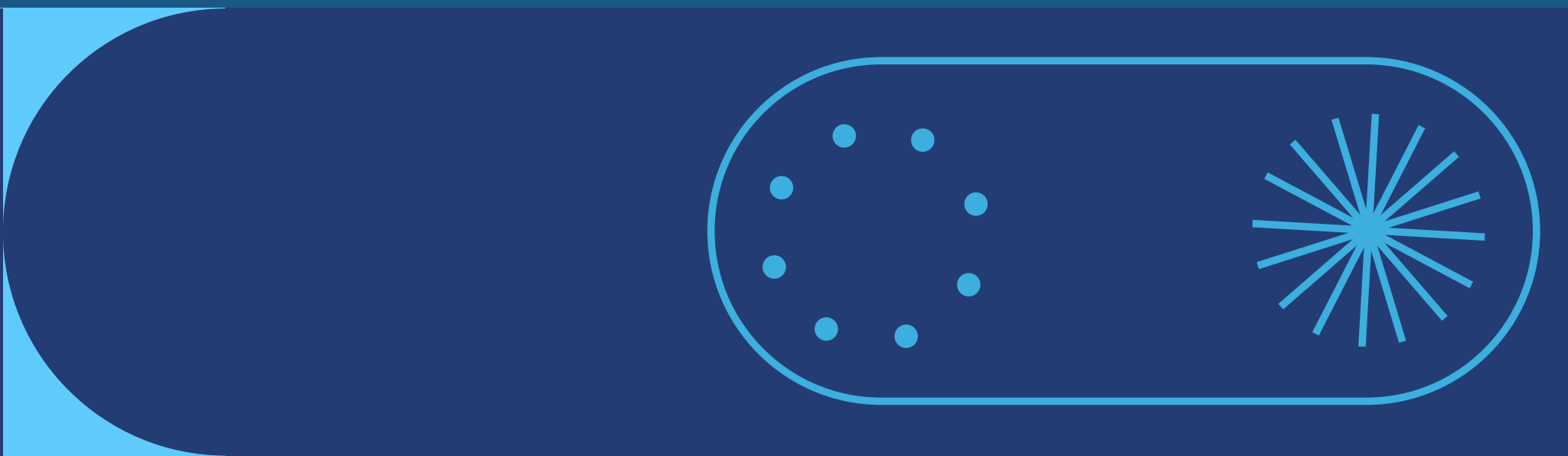
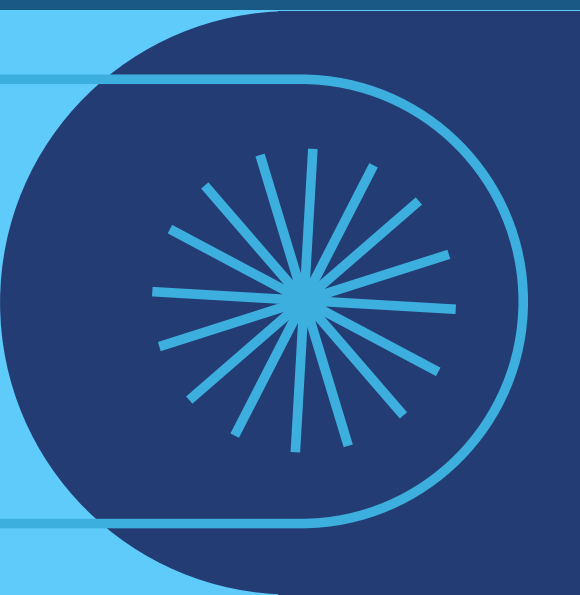
UTILIZING EXISTING KNOWLEDGE EFFECTIVELY

Transfer learning enables models trained on one task to **leverage experiences** gained from related tasks, significantly improving performance. This approach reduces the need for extensive data collection and allows for quicker adaptations to new domains.

Embedding Strategies

TRANSFORMING DATA FOR BETTER INSIGHTS

Embedding strategies facilitate the **representation of complex data** in lower-dimensional spaces, enhancing model training efficiency. By capturing essential relationships within diverse datasets, these techniques improve generalization across various domains, including text and tabular data.



Transfer Learning

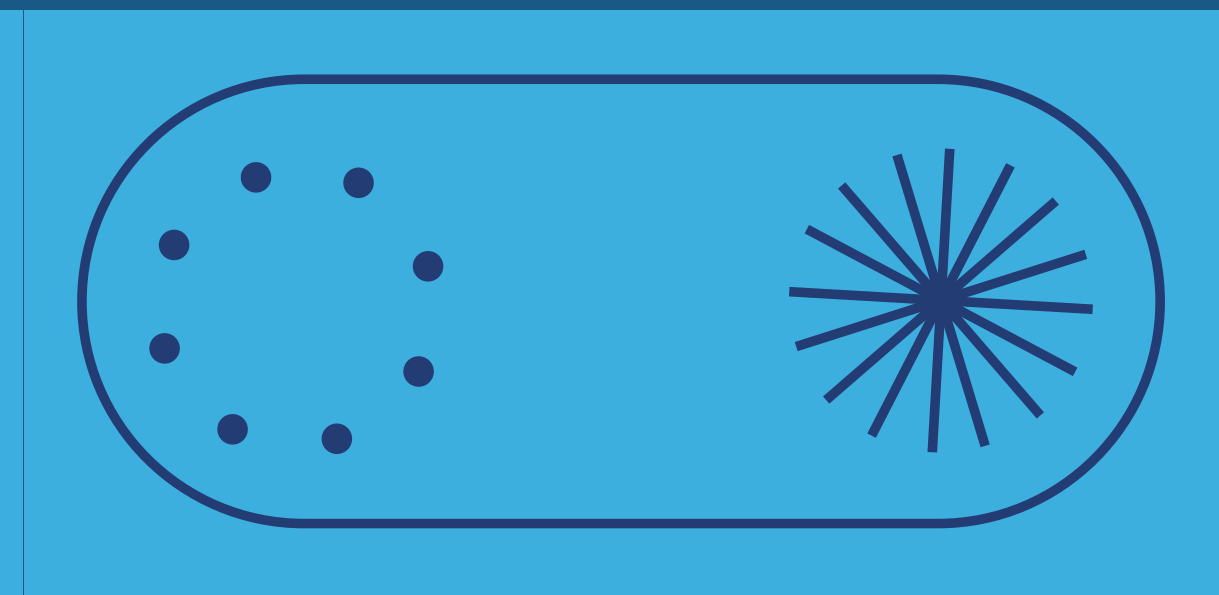
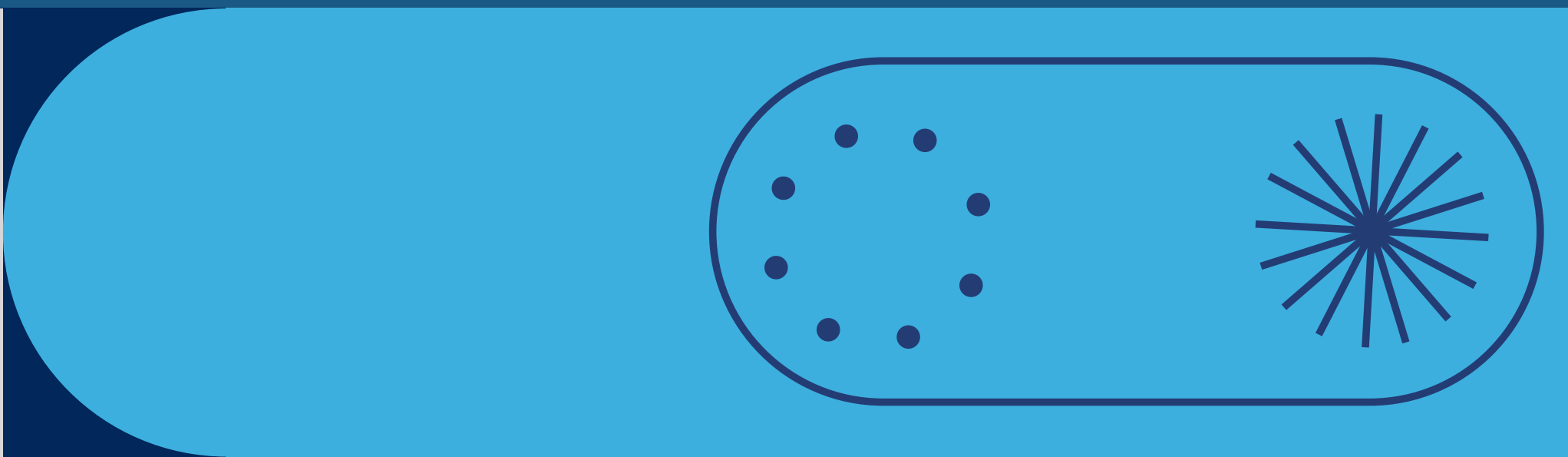
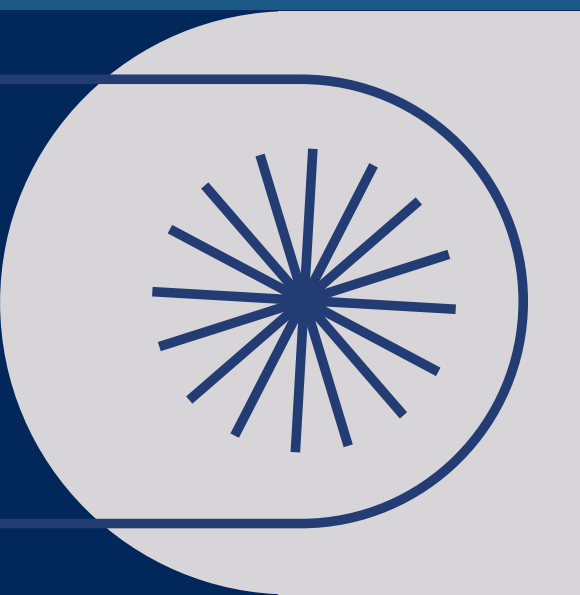
LEVERAGING KNOWLEDGE ACROSS DOMAINS

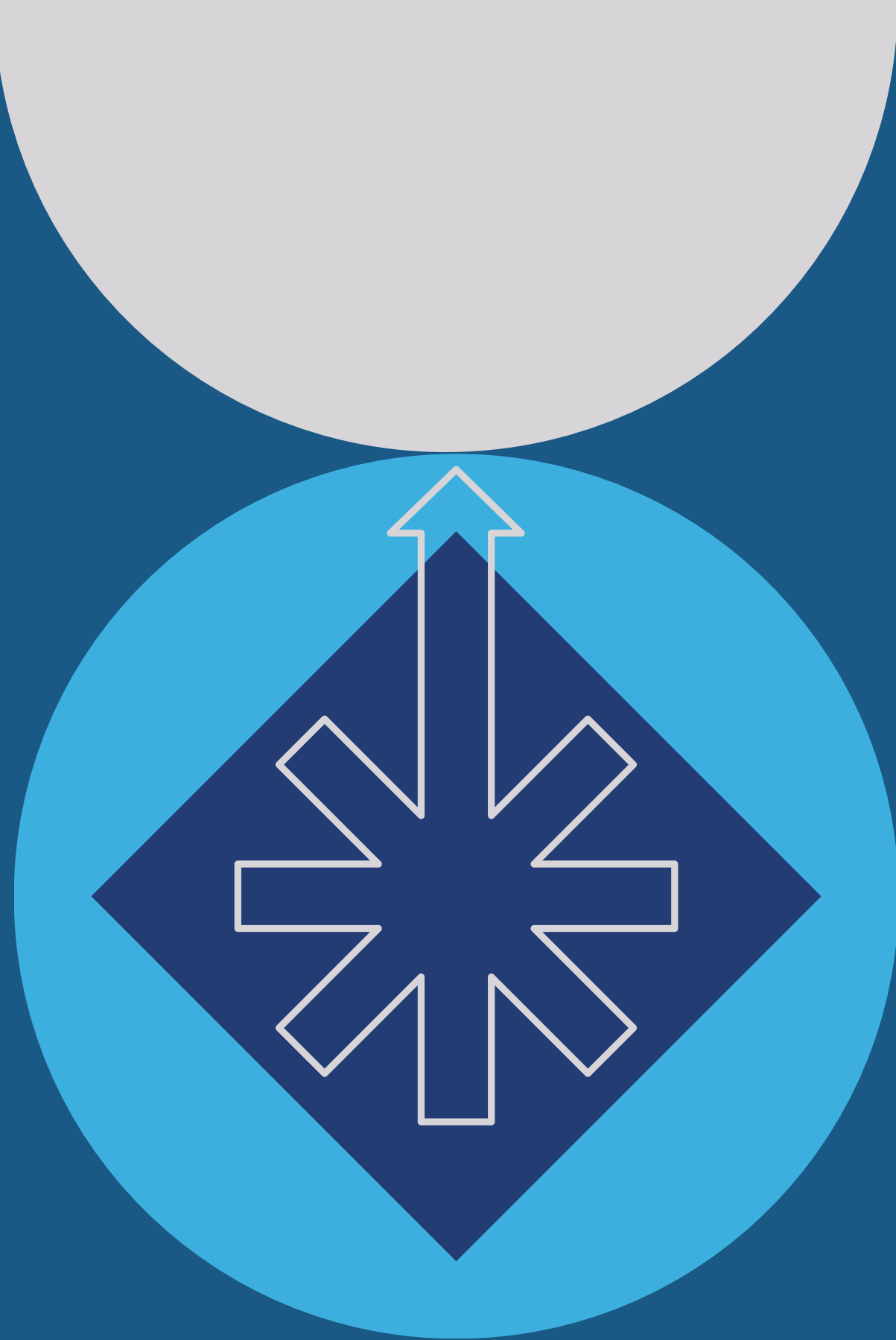
Transfer learning enables models to adapt knowledge gained from one task to **improve performance** on a different yet related task, significantly reducing the amount of data needed and enhancing model efficiency across various domains.

Embedding Techniques

OPTIMIZING FEATURE REPRESENTATION STRATEGIES

Embedding techniques transform raw data into **dense vector representations**, allowing models to capture complex relationships and patterns. These techniques are essential for effectively processing diverse data types, enhancing performance in tasks like time series analysis and tabular data evaluation.

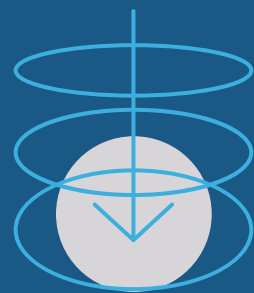




Beyond Vision

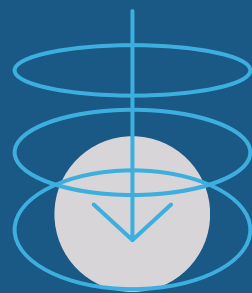
Deep learning has revolutionized not only vision-related tasks but also **time series** and tabular data applications. Techniques such as recurrent neural networks (RNNs) and transformers have shown remarkable success in capturing temporal dependencies, enabling accurate forecasting and anomaly detection in various domains. These advancements demonstrate the power of deep learning in **uncovering insights** from structured and unstructured data.

Time Series Applications Milestones



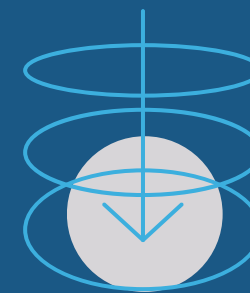
Recurrent Networks

Enabled sequential data processing for predictions.



Attention Mechanisms

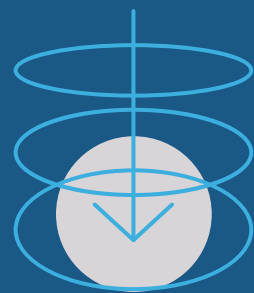
Improved focus on relevant time steps.



Transformers

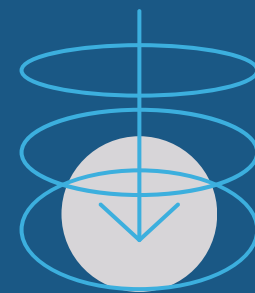
Revolutionized time series analysis with efficiency.

Evolution of Tabular Data



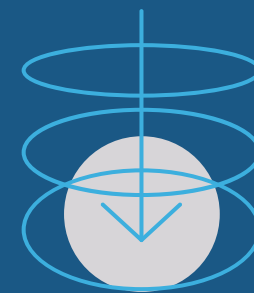
Initial Techniques

Feature engineering began shaping data transformation.



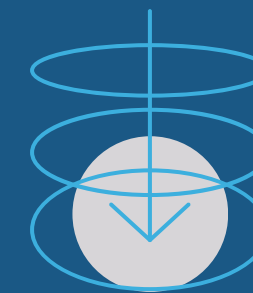
Automation Emergence

Process automation improved efficiency in feature selection.



Deep Learning Introduction

Neural networks started to outperform traditional methods.



Current Trends

Embedding strategies enhance performance across various datasets.