



# Data Exploration

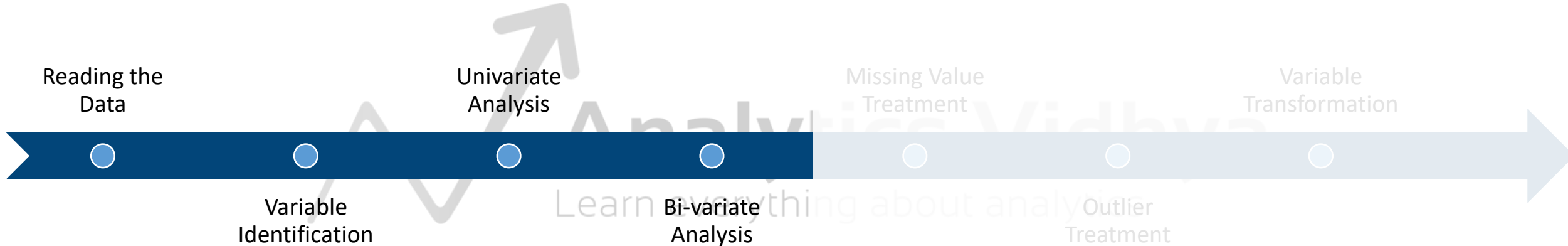
# Stages of Data Exploration



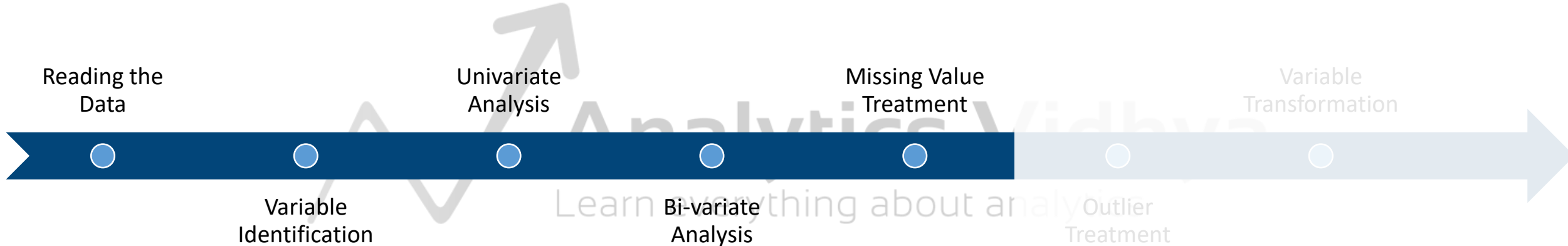
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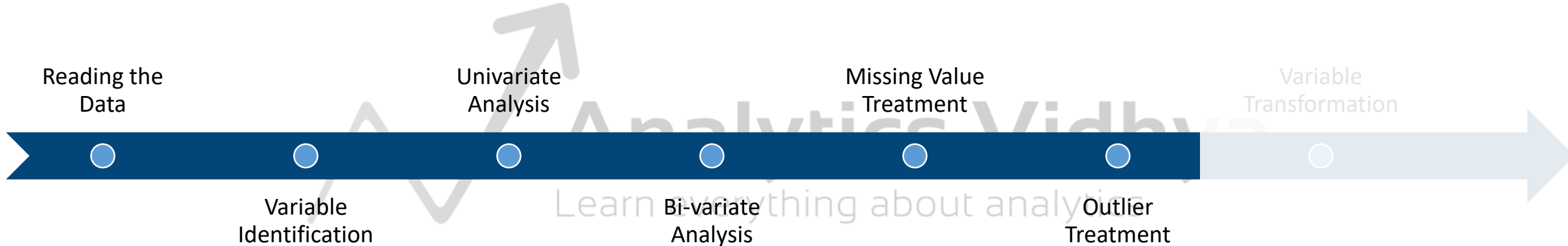
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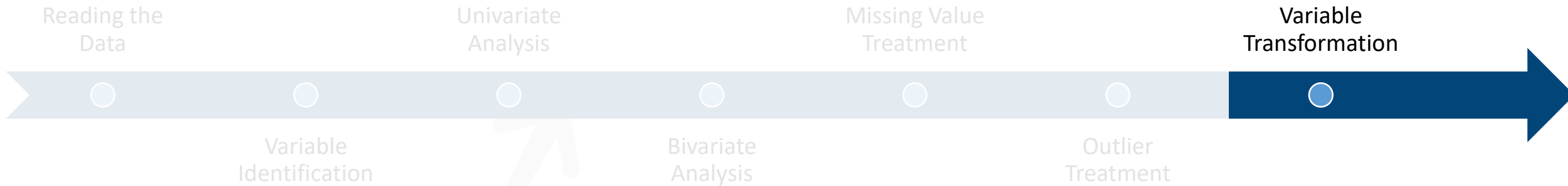
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## Topics to be covered

1. What is Variable Transformation?
2. What do we use Variable Transformation?
3. Common methods for Variable Transformation



# Variable Transformation

## What is Variable Transformation?

Variable transformation is the process by which –

1. We replace a variable with some function of that variable. Example – replacing a variable  $x$  with its logarithm.
2. We change the distribution or relationship of a variable with others

# Variable Transformation

## Why do we use Variable Transformation?

Variable Transformation is used to –

1. Change the scale of a variable. For example – If 10 variables are measured in km and 1 in miles
2. Transforming non linear relationships into linear relationships
3. Create symmetric distributions from skewed distributions

# Variable Transformation

## Common methods of Variable Transformation?

1. Logarithm – Taking log of the variable reduces right skewedness of the variable.
2. Square root – Used for right skewed variable with positive values only.
3. Cube root – Used for right skewed variable with positive or negative values.
4. Binning – Used for converting Continuous variables to Categorical variables.

