Asking the Right Question

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Machine Learning Workflow

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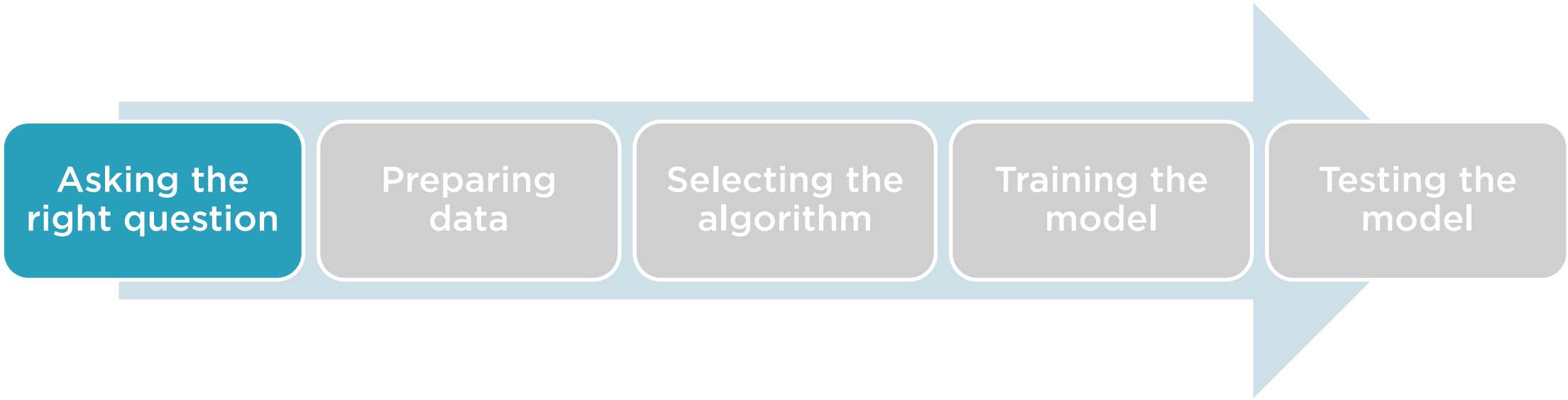

Don’t we already have the question?

“Predict if a flight will be on-time”

Need statement to direct and validate work

Define end goal, starting point, and how to achieve goal

Solution Statement Goals

Define scope (including data sources)

Define target performance

Define context for usage

Define how solution will be created

Scope and Data Sources

“Predict if a flight would be on-time”

“Using DOT data, predict if a flight would be on-time”

US flights only

Flights between US airports only

DOT database is a good source

Data

“Using DOT data, predict if a flight would be on-time”

“Using DOT data, predict if a flight would be delayed”

Preliminary data review

Delays tracked, not on-time

Performance Targets

“Using DOT data, predict if a flight would be delayed”

“Using DOT data, predict with 70+% accuracy if a flight would be delayed”

Binary result (True or False)

Coin Flip = 50% Accuracy

70% Accuracy is common target

Context

“Using DOT data, predict with 70+% accuracy if a flight would be delayed”

“Using DOT data, predict with 70+% accuracy if a flight would arrive 15+ minutes after the scheduled arrival time.”

Data driven results

DOT “delayed” => greater than 15 minutes after scheduled

Solution Creation

“Using DOT data, predict with 70+% accuracy if a flight would arrive 15+ minutes after the scheduled arrival time.”

“Use the Machine Learning Workflow to process and transform DOT data to create a prediction model. This model must predict whether a flight would arrive 15+ minutes after the scheduled arrival time with 70+% accuracy.”

Machine Learning Workflow

- Process DOT data
- Transform data as required

Use the Machine Learning Workflow to process and transform DOT data to create a prediction model. This model must predict whether a flight would arrive 15+ minutes after the scheduled arrival time with 70+% accuracy.

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