Lesson 4.2: Applications of Machine Learning

DISTRIBUTED COMPUTING WITH SPARK SQL

Applications of Machine Learning

Brooke Wenig/Conor Murphy
Machine Learning Practice Lead/
Data Scientist, Databricks

UCDAVIS
Continuing and Professional Education

Slide 2: Welcome Back!

Welcome Back!

Examine some applications of machine learning

Slide 3: Learning Objectives

Learning Objectives

Identify new machine learning use cases

Understand how machine learning can address these problems

Slide 4: How Businesses Use Data Over Time

How Businesses Use Data Over Time

Early Stages

- May not use many statistics
- Summary statistics and key business metrics
- Little awareness or support for the value of data

Middle Stages

- Data starts to be seen as valuable
- Use data to highlight current business processes

Mature Stages

- Organization becomes increasingly data-driven
- Use data prescriptively to steer the organization in new directions
- Leads to discovering and addressing otherwise unknown customer segments

Slide 5: Applications of Machine Learning

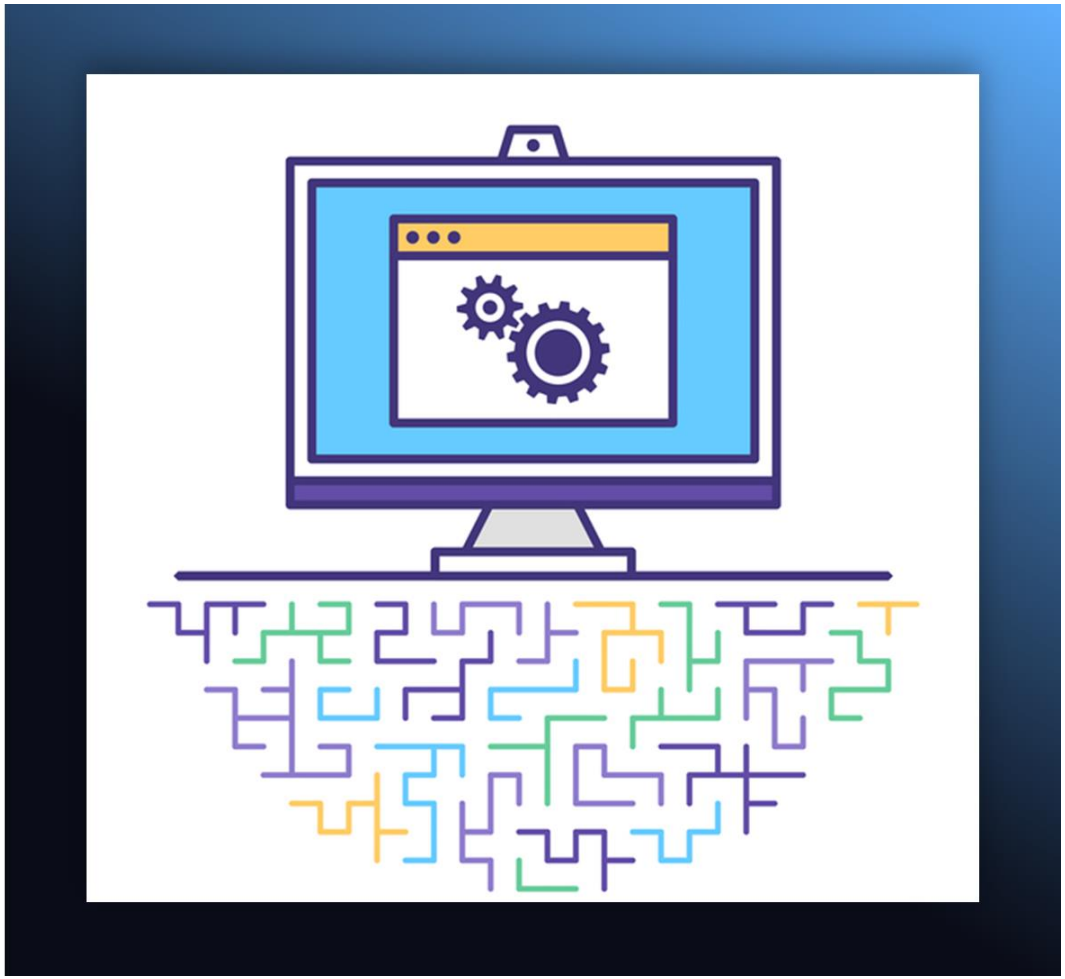
Applications of Machine Learning

Fraud Detection

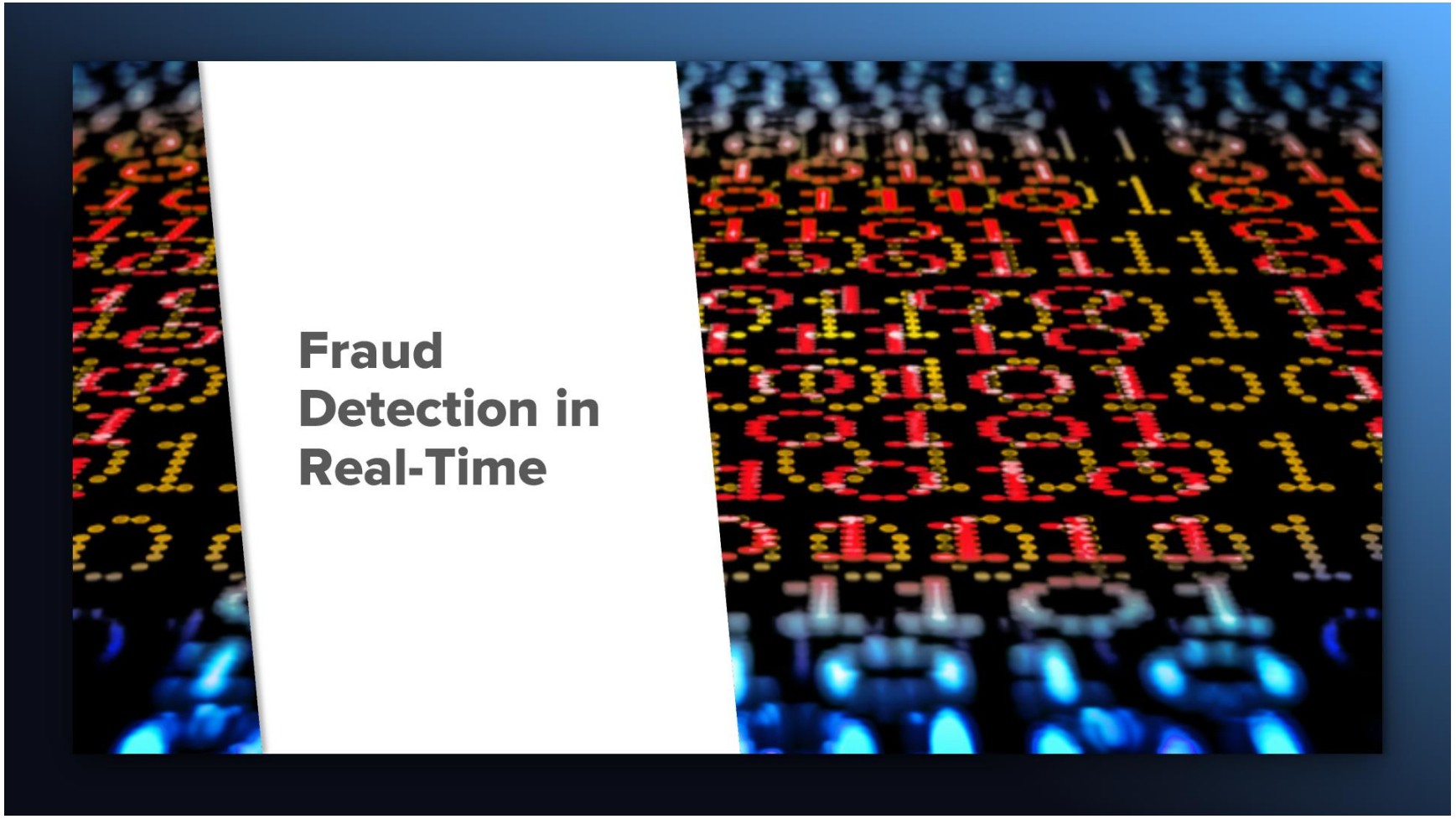
A/B Testing

Image Recognition

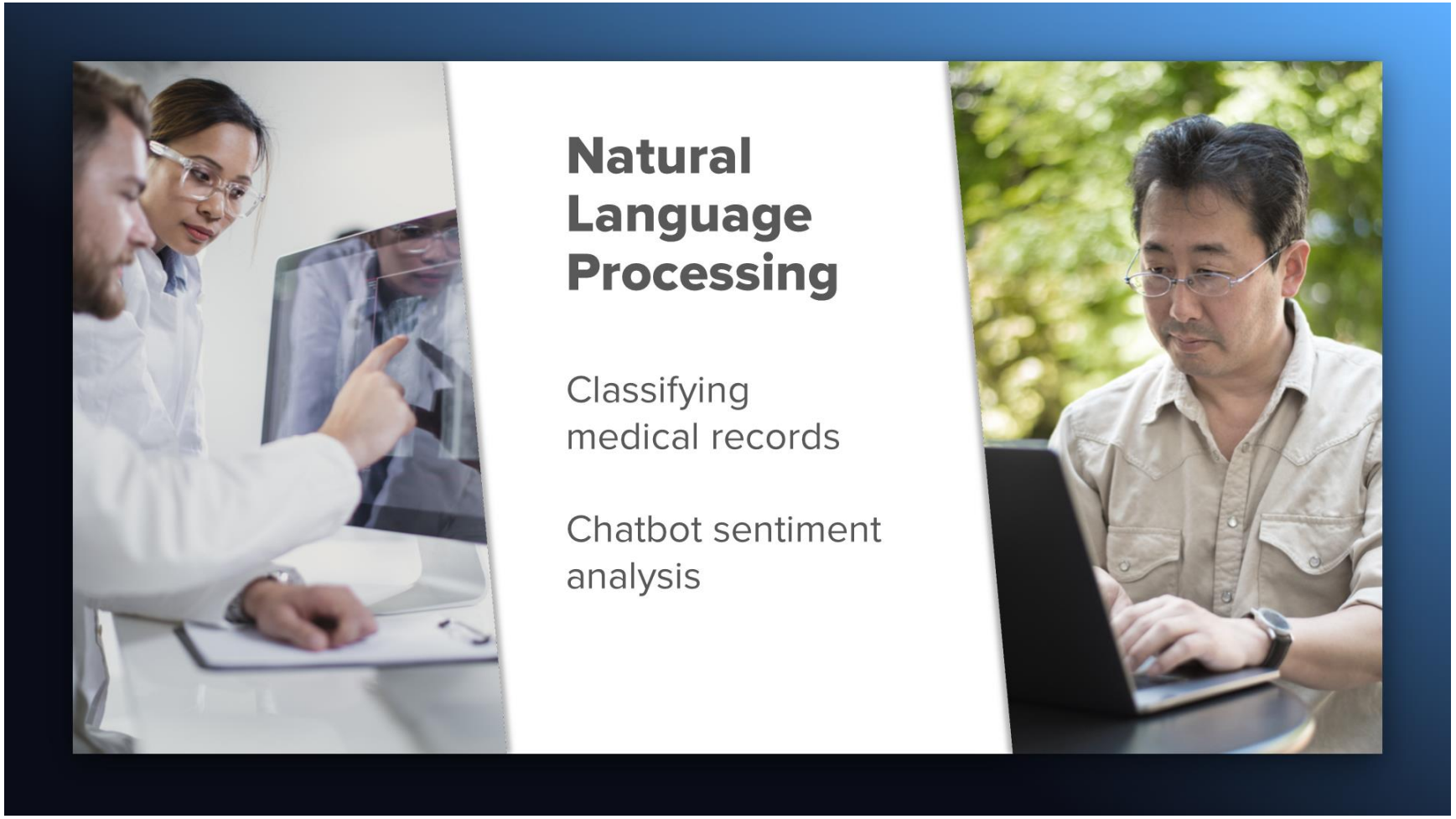
Natural Language Processing



Slide 6: Fraud Detection in Real-Time

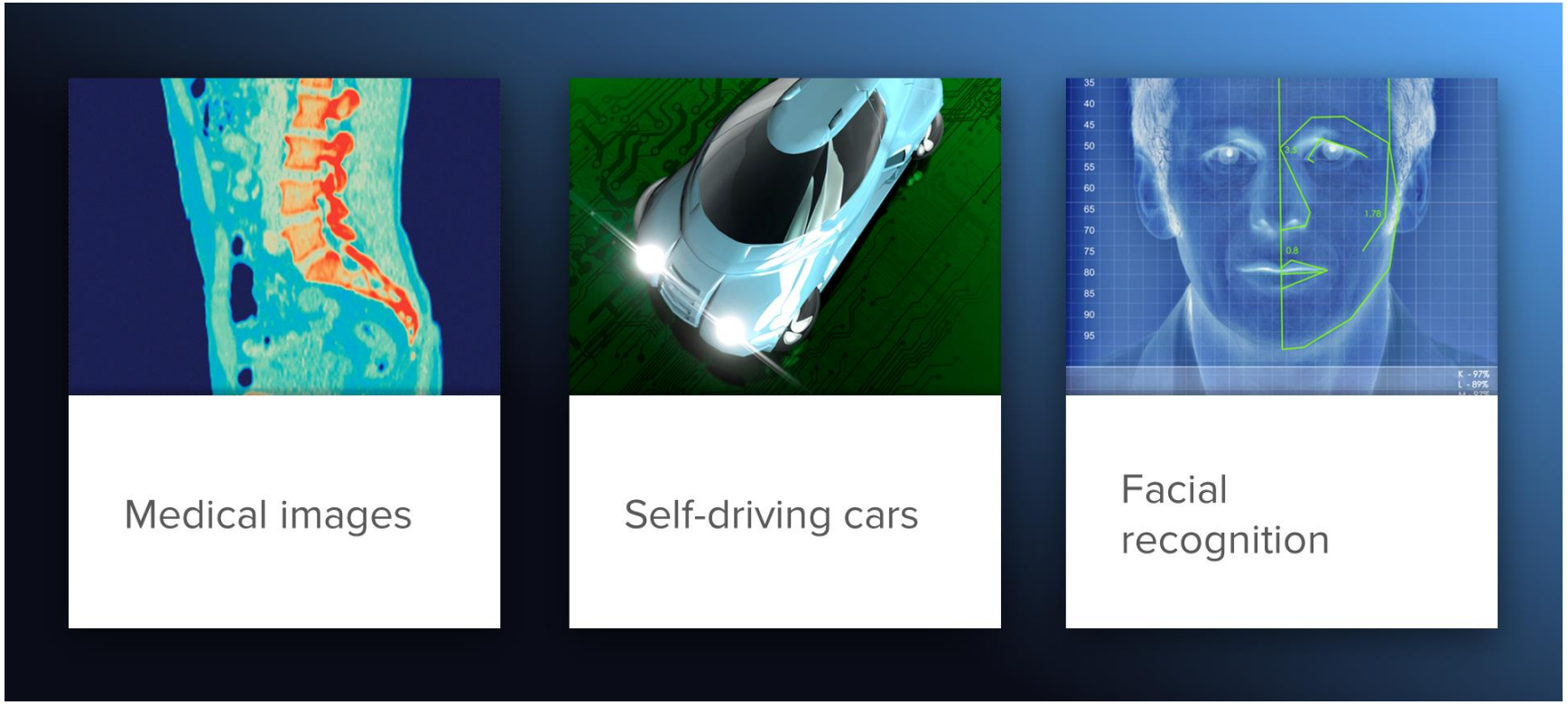


Slide 7: Natural Language Processing

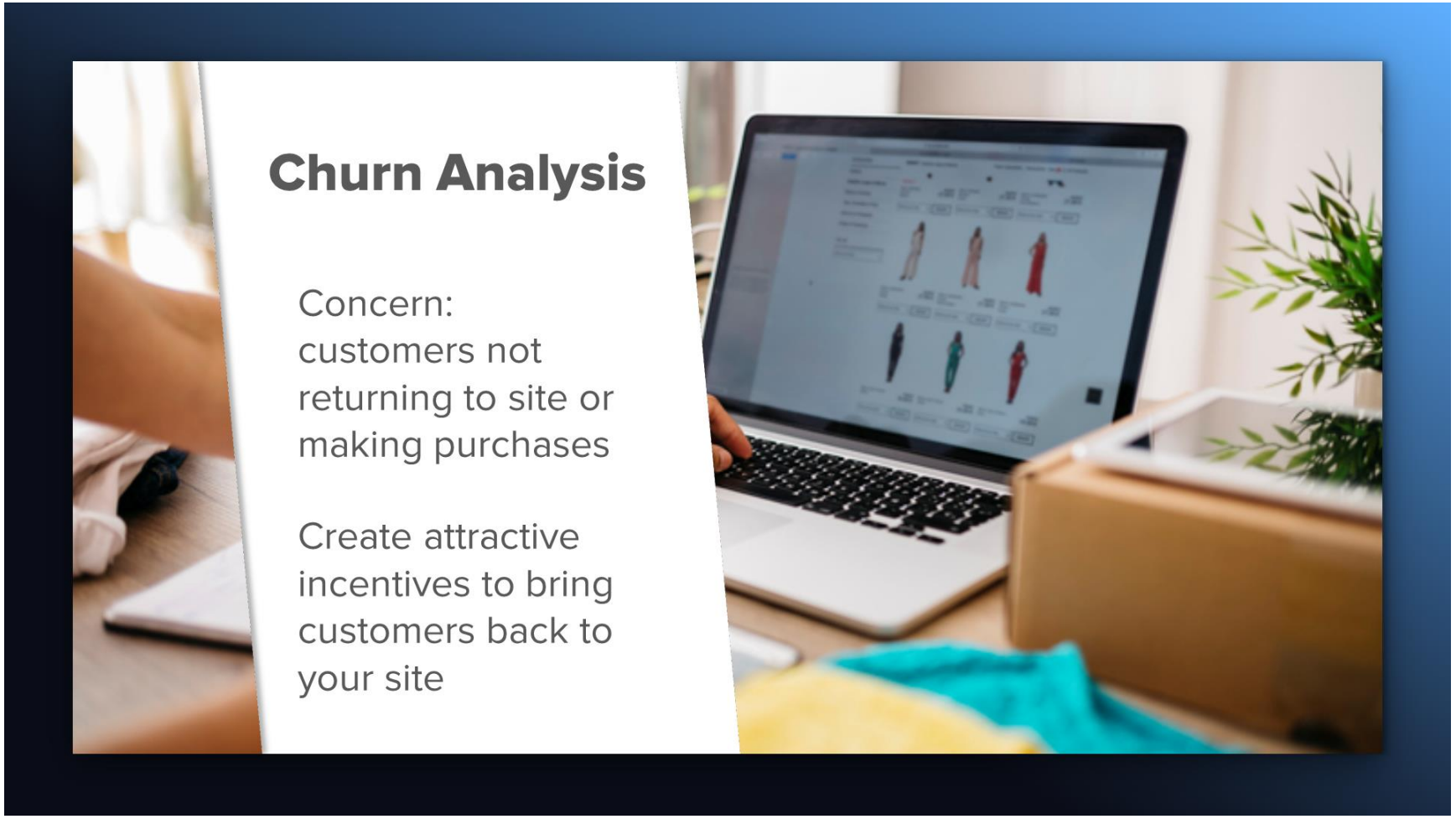


Slide 8: Image Processing

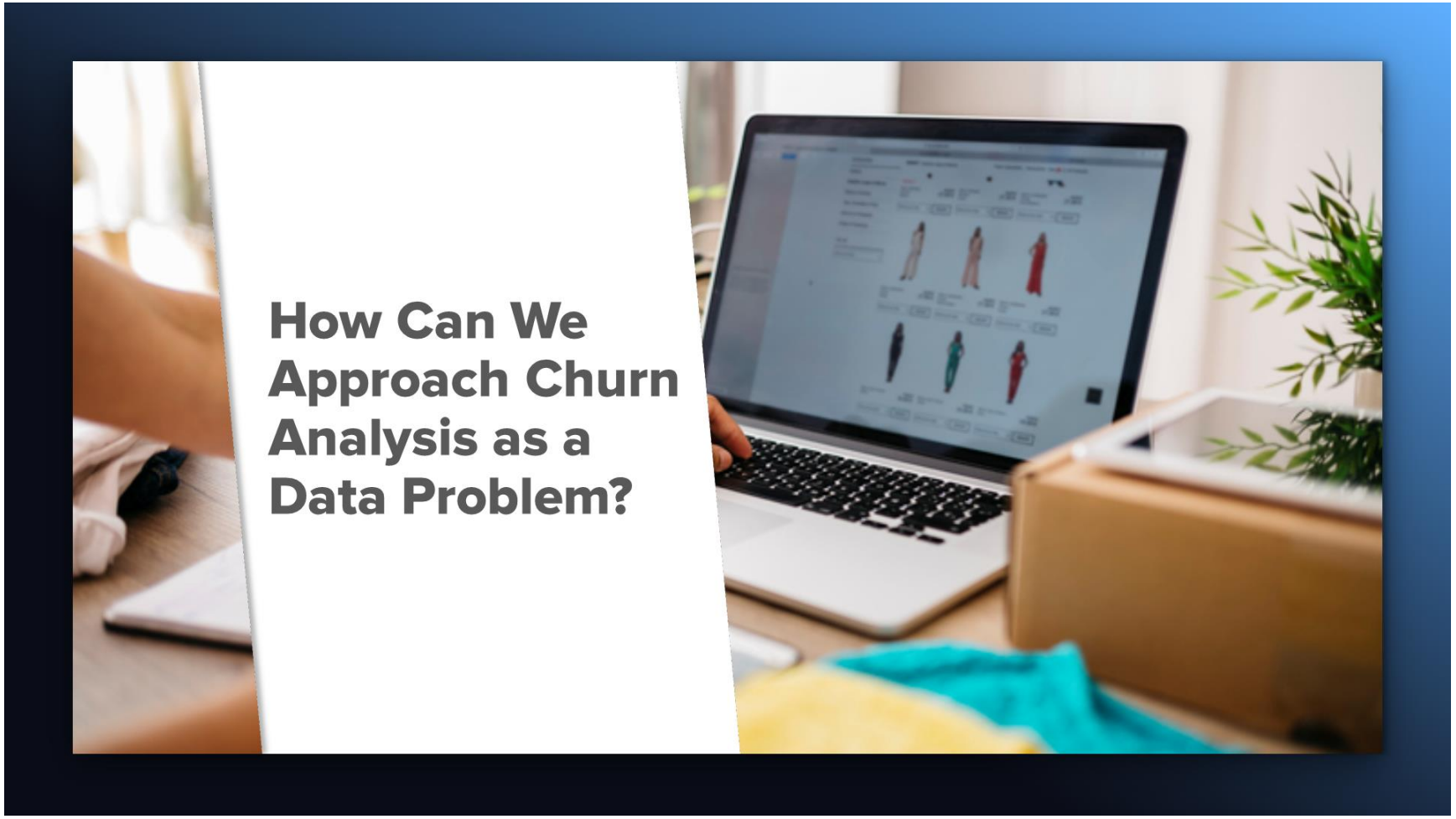
Image Processing



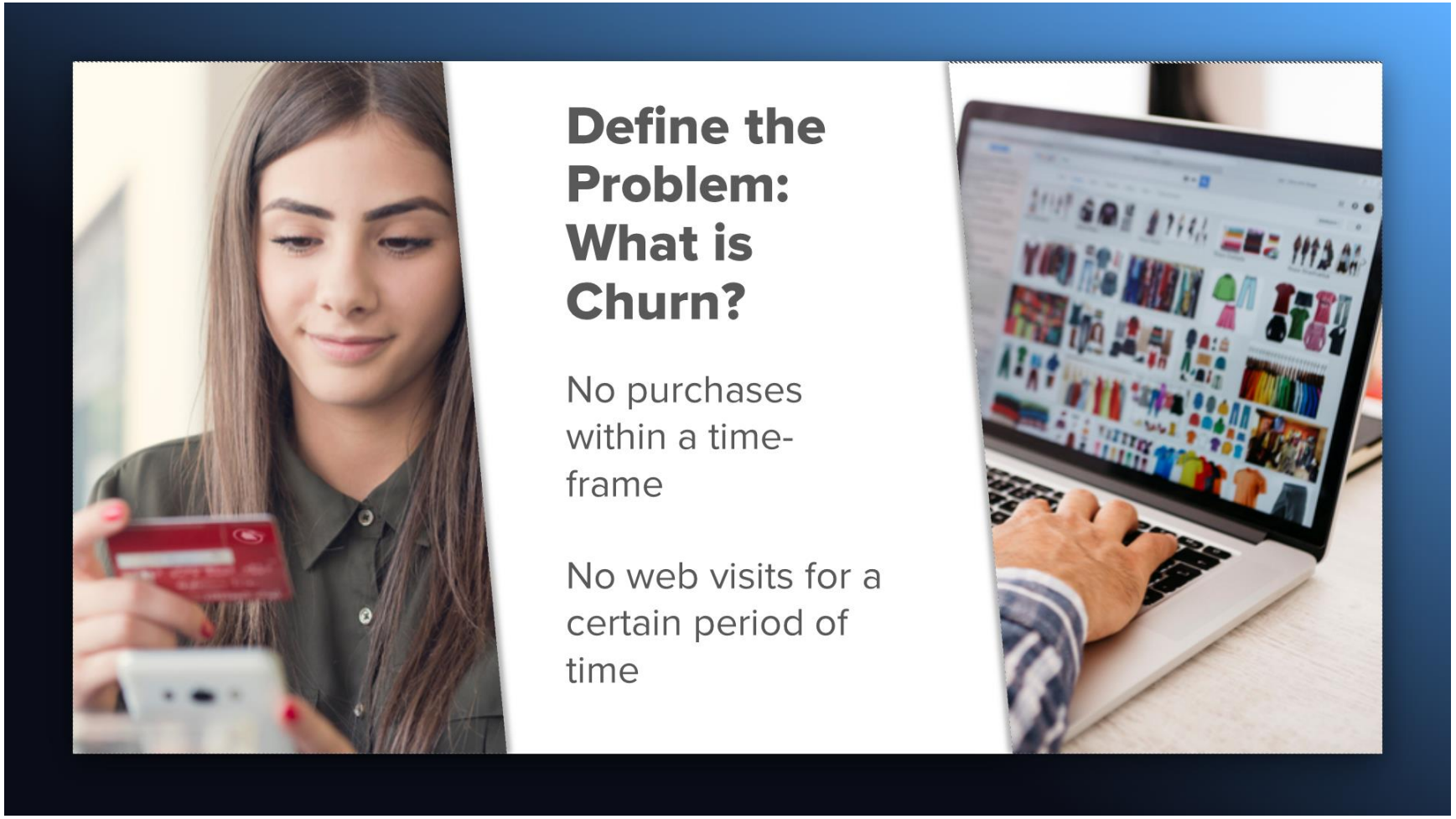
Slide 9: Churn Analysis



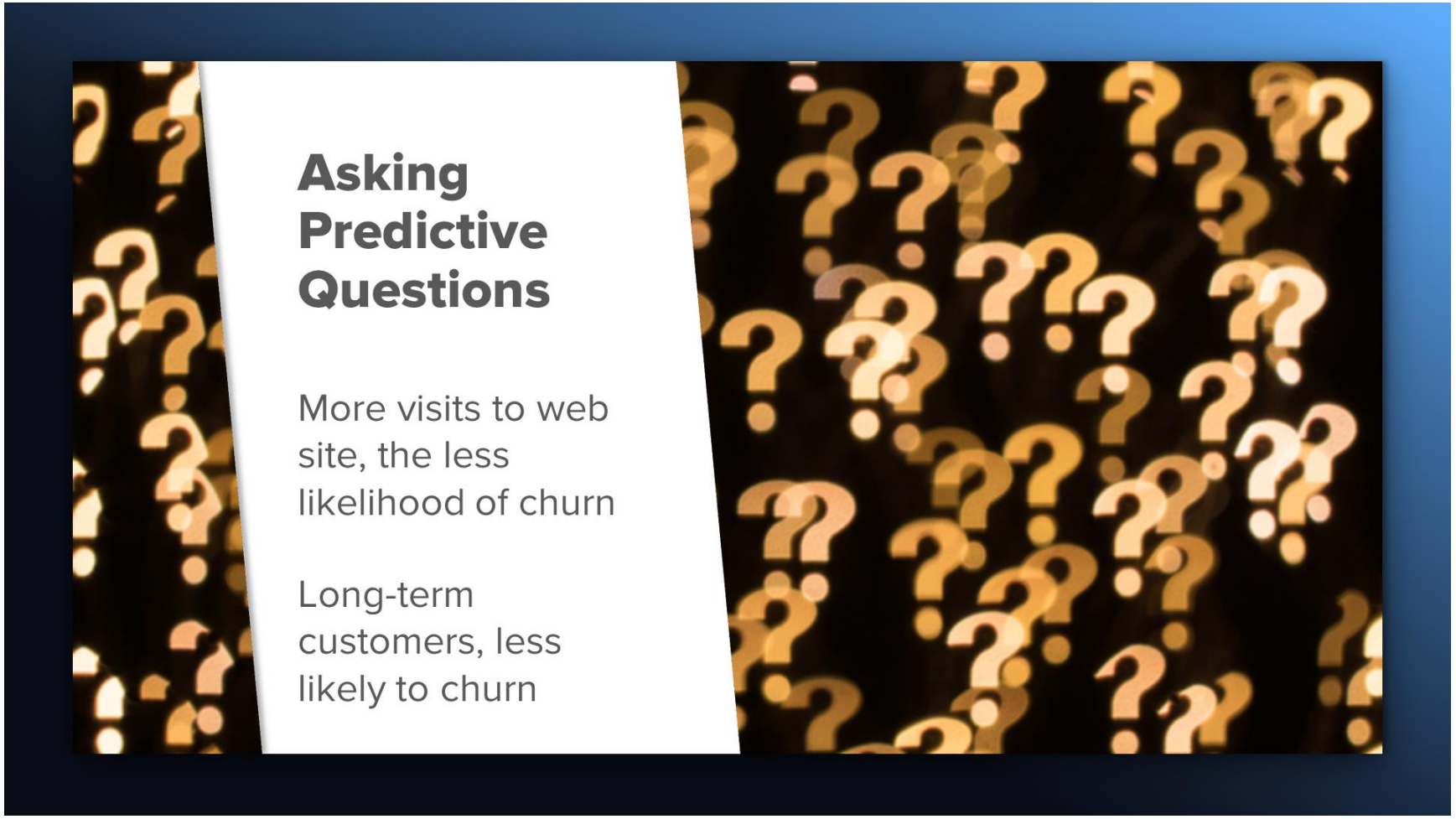
Slide 10: How Can We Approach Churn Analysis as a Data Problem



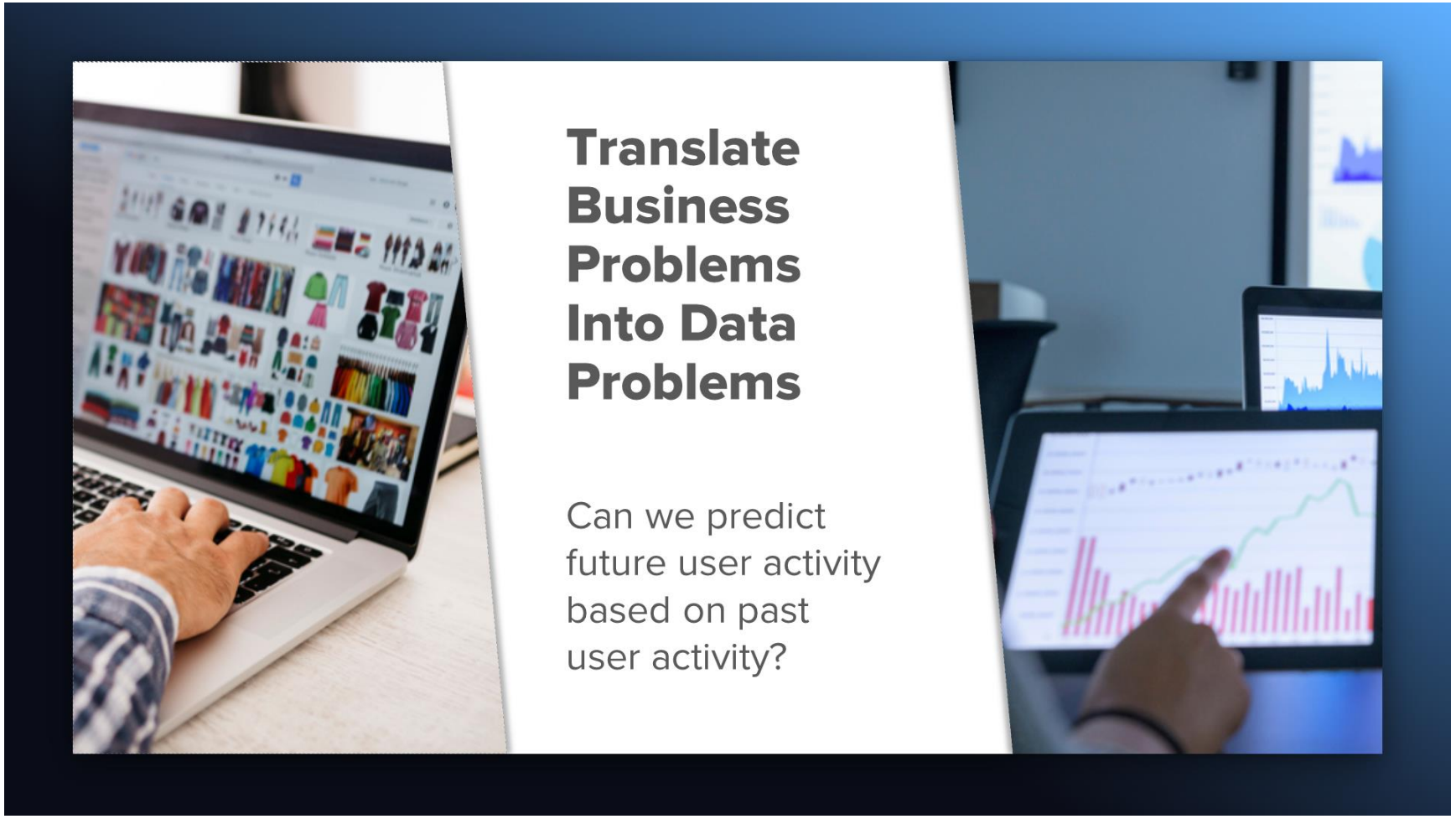
Slide 11: Define the Problem: What is Churn?



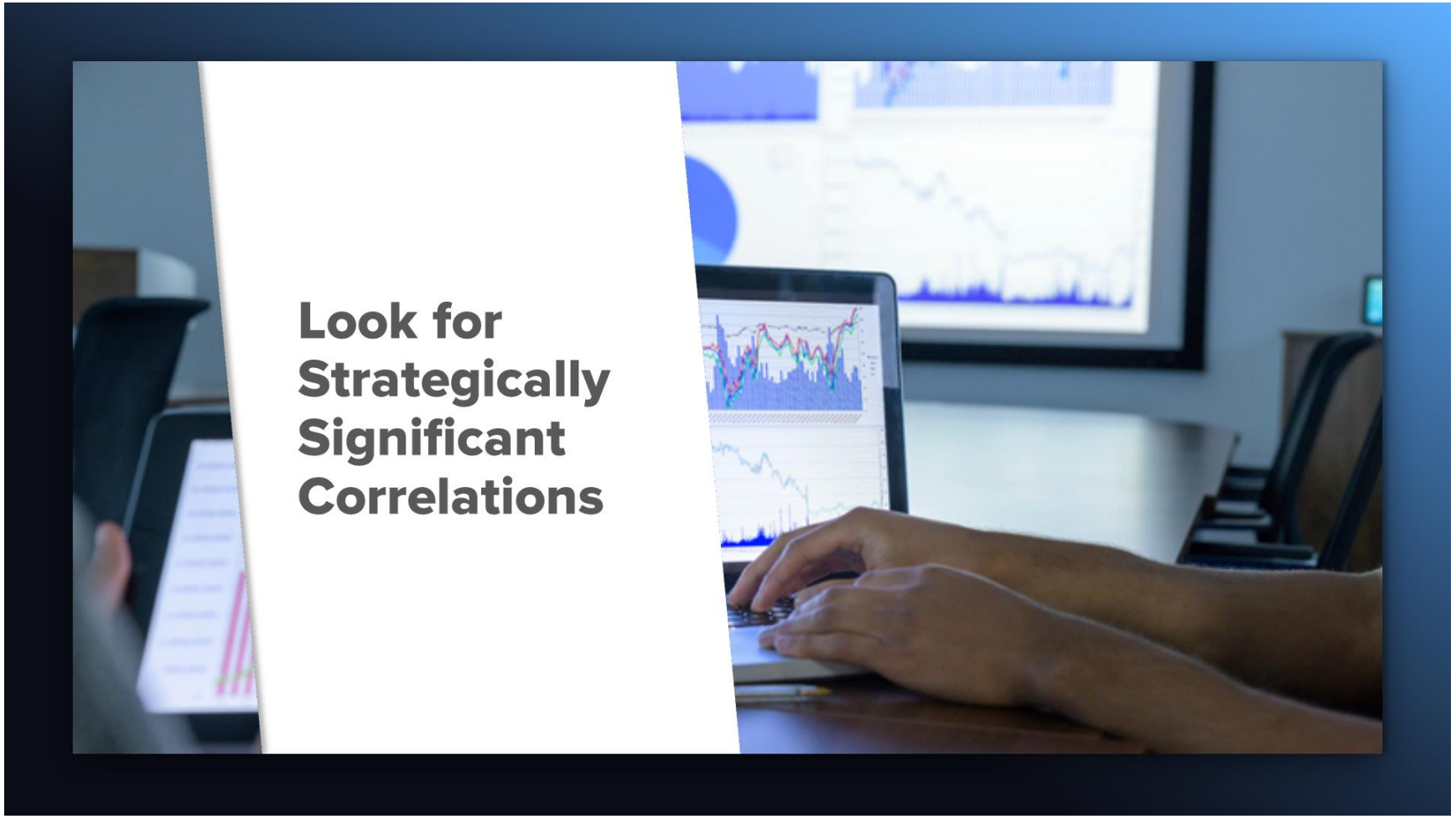
Slide 12: Asking Predictive Questions



Slide 13: Translate Business Problems Into Data Problems



Slide 14: Look for strategically Significant Correlations



Slide 15: Coming Up

Coming Up

How machine learning and Spark advance your understanding of data to meet more complex and impactful data needs