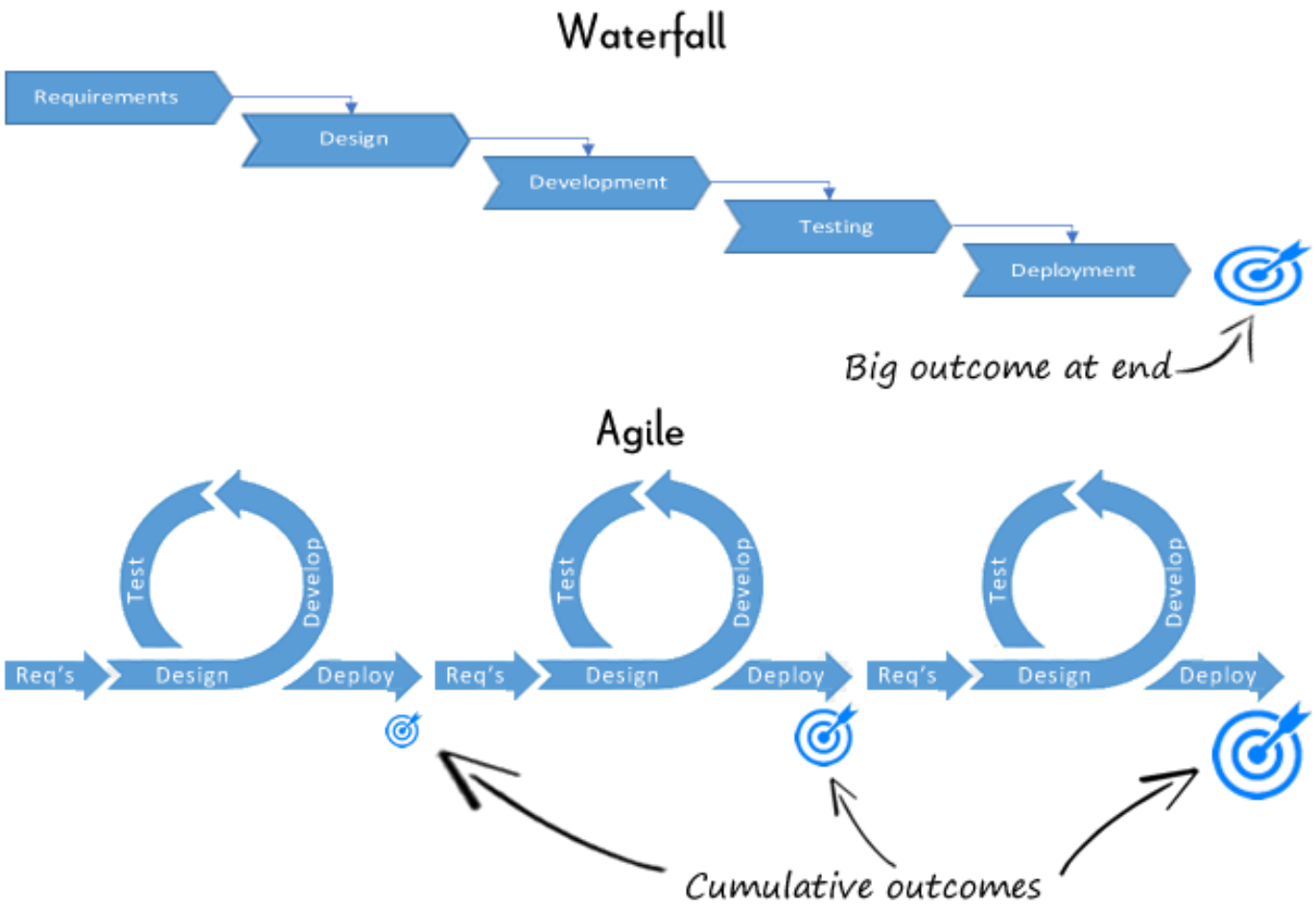
TRANSITIONING FROM SOFTWARE DEVELOPER TO MACHINE LEARNING DEVOPS ENGINEER

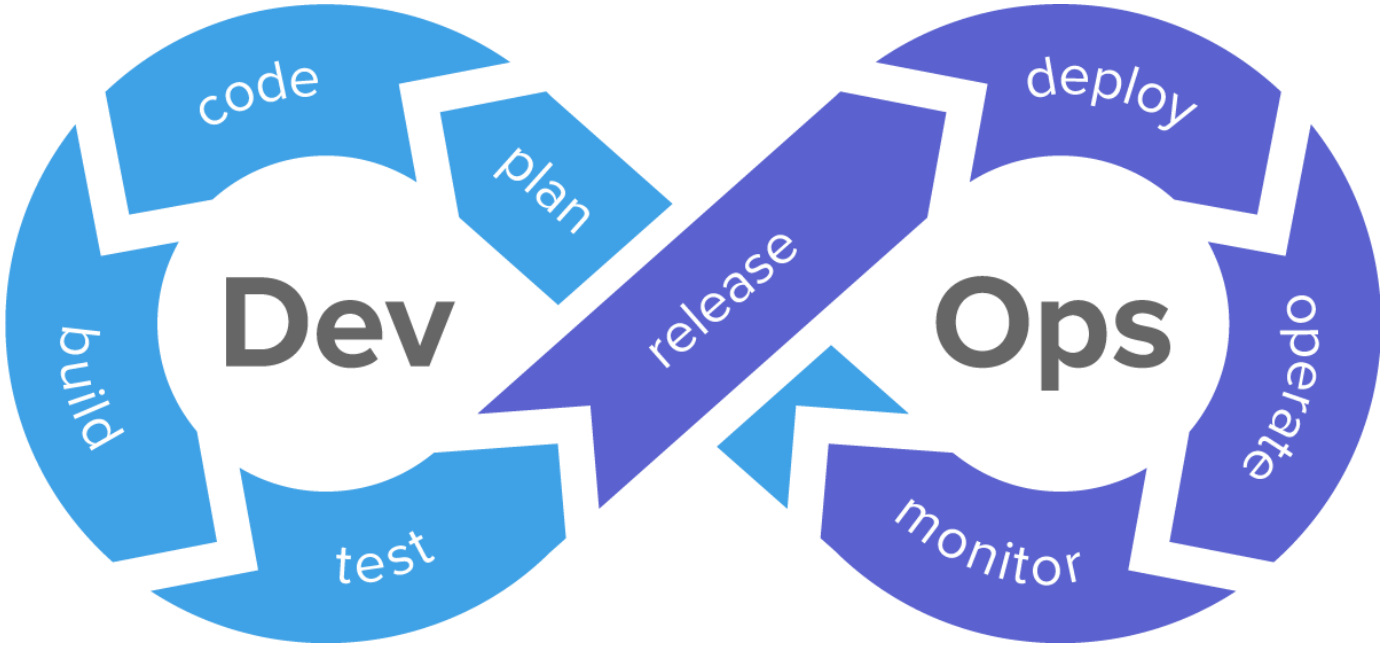
SCOTT FRAME

BACKGROUND

- BS in EE/CE
- Work for DoD as Electronics Engineer
- Develop Real Time Software
- MS in Computer Science
- Develop Web Apps / Web Services
- SW Eng >>> Tech Lead >>> Solution Architect
- Machine Learning Engineer / ML Ops


Waterfall
Requirements
Design
Development
Testing
Deployment
Big outcome at end
Agile
Test
Develop
Req's
Design
Deploy
Cumulative outcomes

What is DevOps ?



CI/CD PIPELINE

Data Analytics – measurement of traditional indicators and analysis to describe historical trends

Data Science – the use of advanced tools to extract data, make predictions, and discover trends

Machine Learning – the use of large data sets and extensive computing power to automate analytical model building with advanced algorithms

Developing a Machine Learning Model

Data Exploration

Data Wrangling

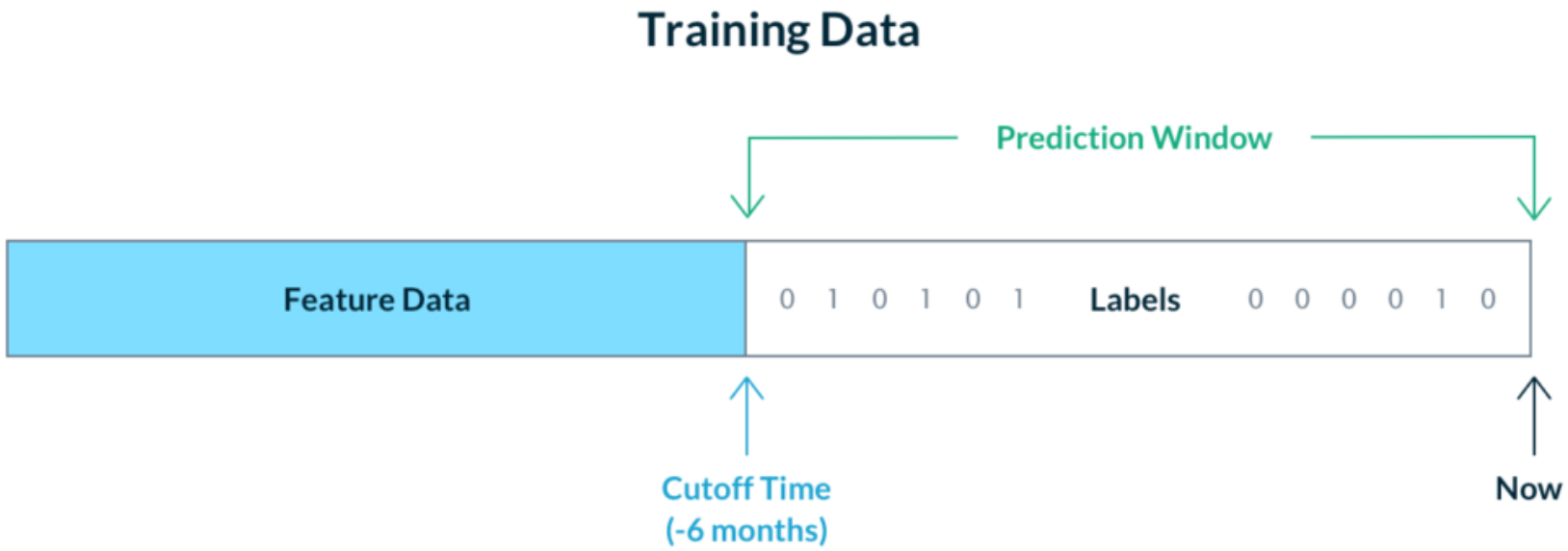
Feature Selection

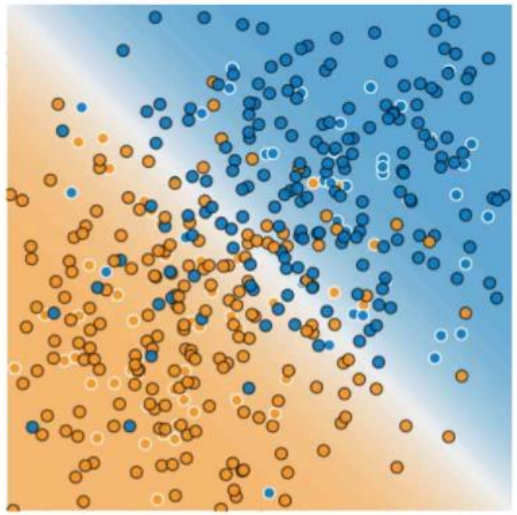
Algorithm Selection

Tuning

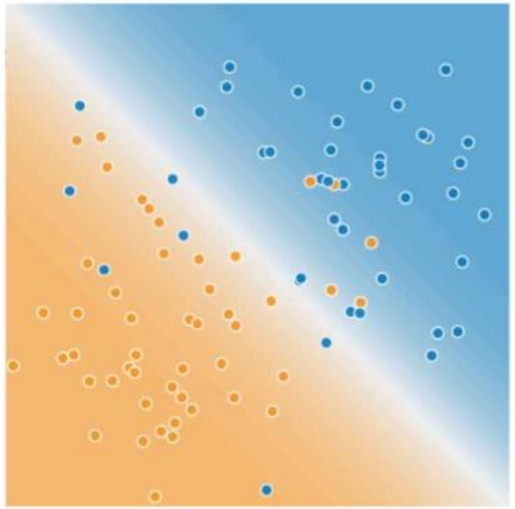
Model Evaluation

Use historical data to train a model with known outcome (Target)





Training Data



Test Data

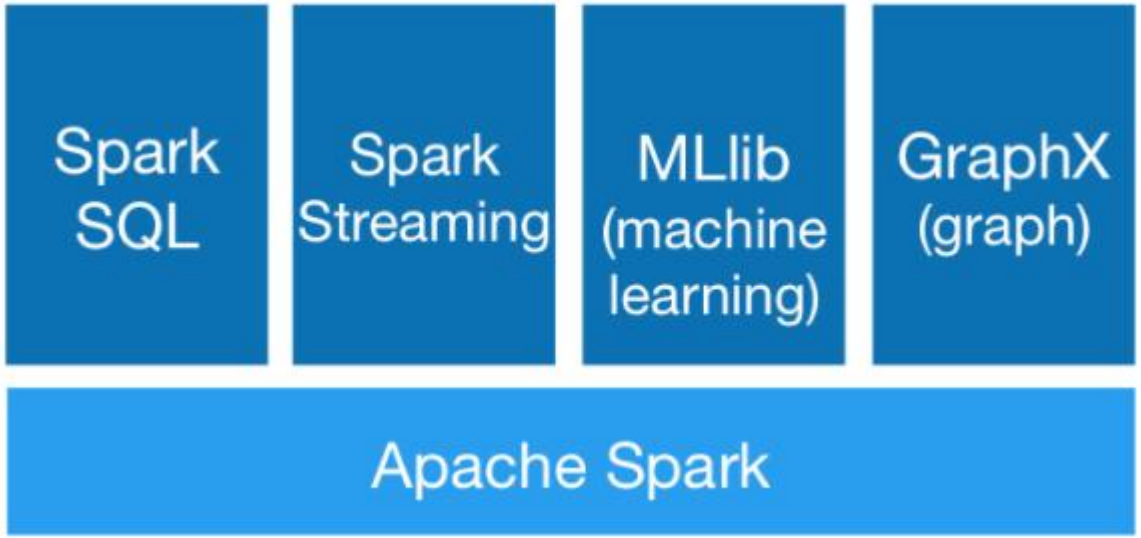
Images from Google Developers Machine Learning Crash Course
https://developers.google.com/machine-learning/crash-course/training-and-test-sets/splitting-data

Classification and Regression

- Logistic/Linear Regression
- Decision Tree
- Random Forest
- Gradient Boosted Tree

* Use one or some of ML algorithms to TRAIN a model that can be used to SCORE

Lightning-fast unified analytics engine



What is Industrialized Machine Learning Ops (MLOps)

- Standardize and Productionize ML Models
- Deploy, Monitor, Evaluate ML Models
- Free Up Data Scientists to Develop New Models

Industrialized Machine Learning Ops (MLOps)

- Harden and Automate ML Model Notebooks
- Develop and Maintain Feature Store
- Build Utilities for Model Development/Analysis/Evaluation
- Monitor Scoring Jobs, Retrain Training Jobs

QUESTIONS