

TensorFlow: Getting Started

INTRODUCTION



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TensorFlow in Action

What is the weather?

Today it is 70 and sunny



Virtual Assistants

Erika Juan Sue



**Automatic
Recognition**

Right lane is clear.

Change lane



**Self-driving
Vehicles**



TensorFlow

An interface for expressing machine learning algorithms



TensorFlow

An interface for expressing machine learning algorithms
and an implementation for executing such algorithms.



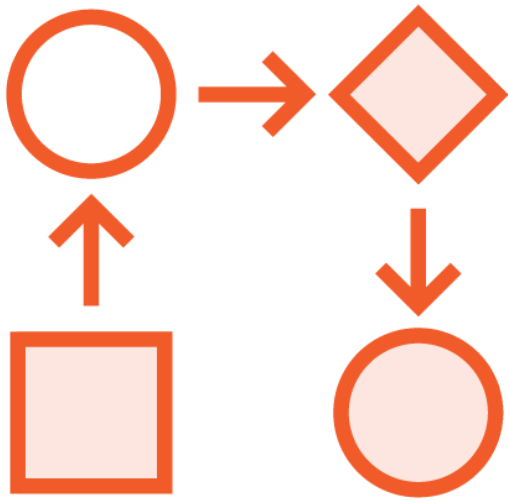
TensorFlow

An interface for expressing machine learning algorithms
and an implementation for executing such algorithms.

A framework for creating ensemble algorithms for today's
most challenging problems



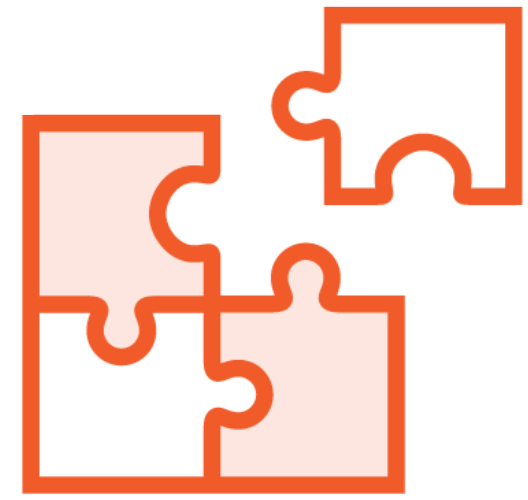
TensorFlow as an Interface



Lower level library

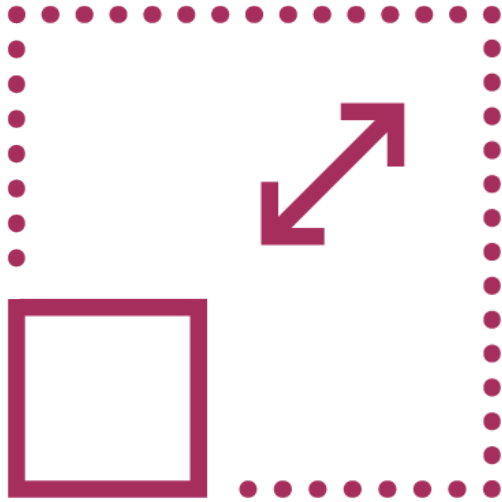


Flexible structure



Predefined
implementation
available

TensorFlow as an Implementation for Execution



Scales up and down



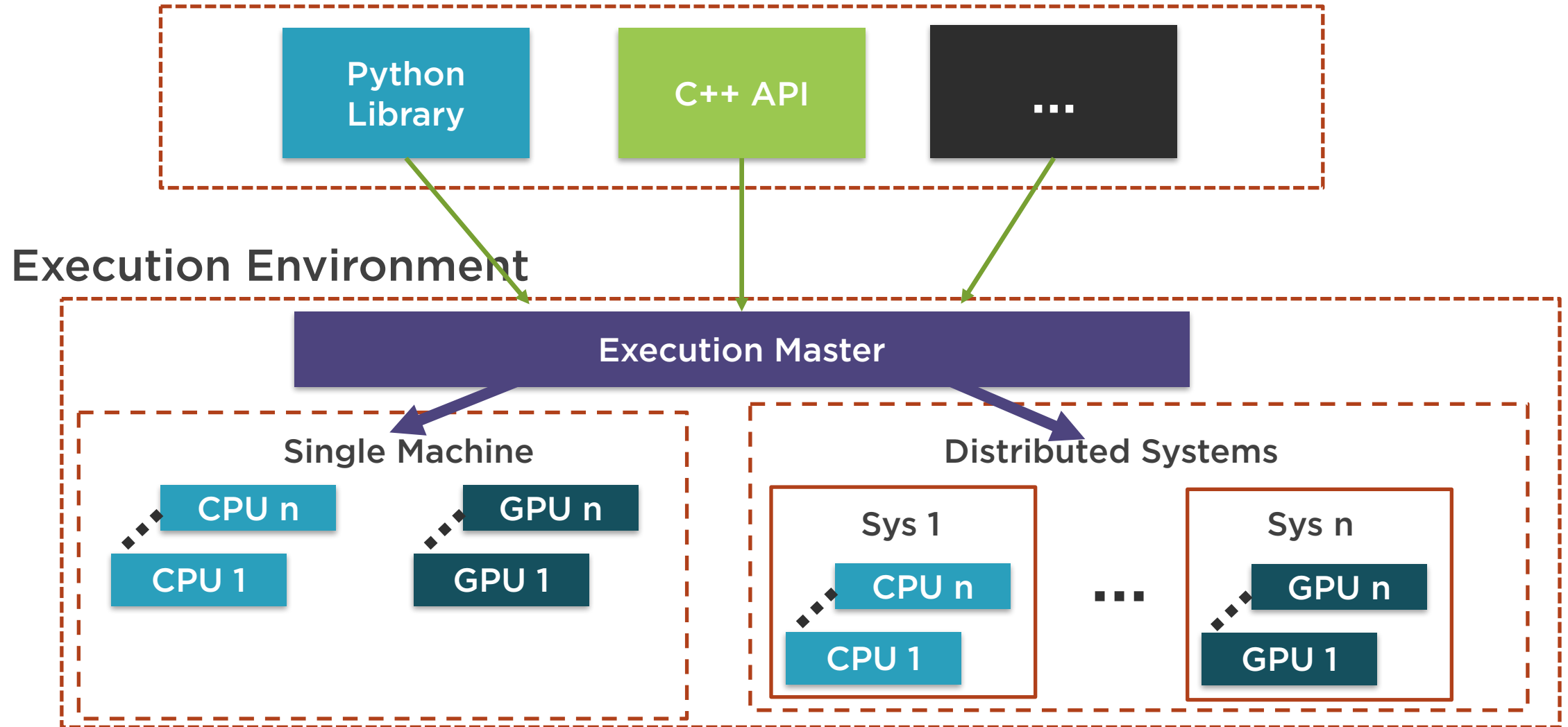
Easier deployment to
production



Small experiment to
industrial strength

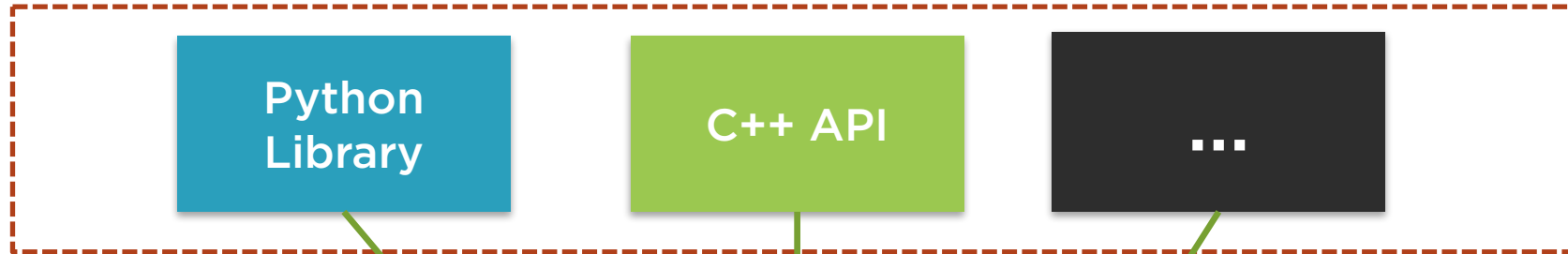
TensorFlow Environment

Language Interface

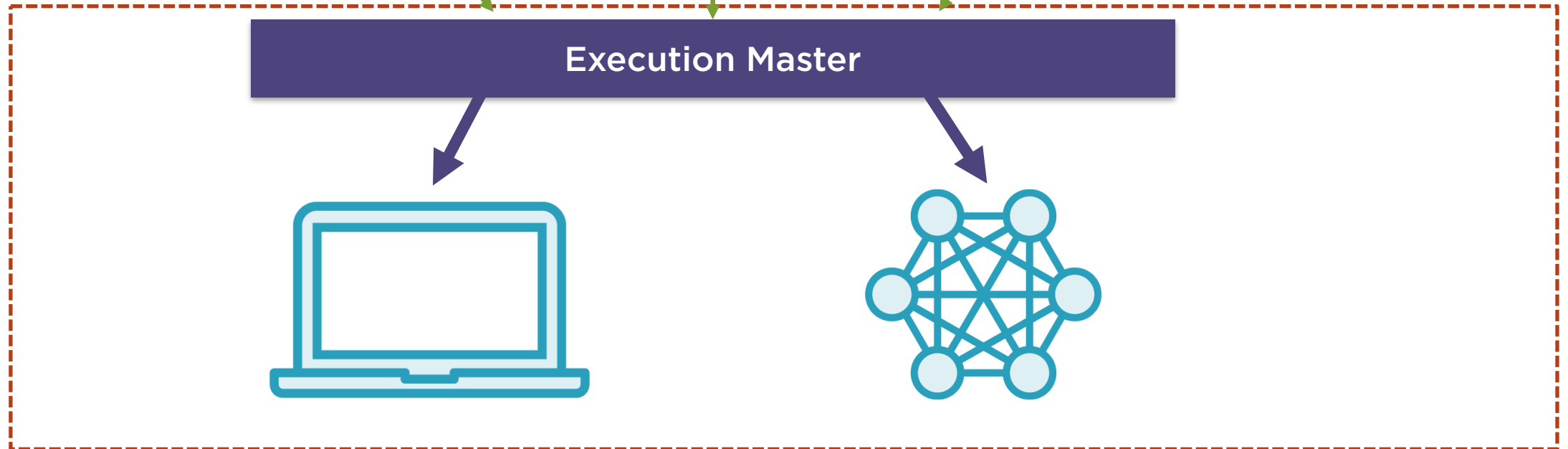


TensorFlow Environment

Language Interface



Execution Environment



Computation Graph of $(a * b) + c$

Tensor is n-dimension structure

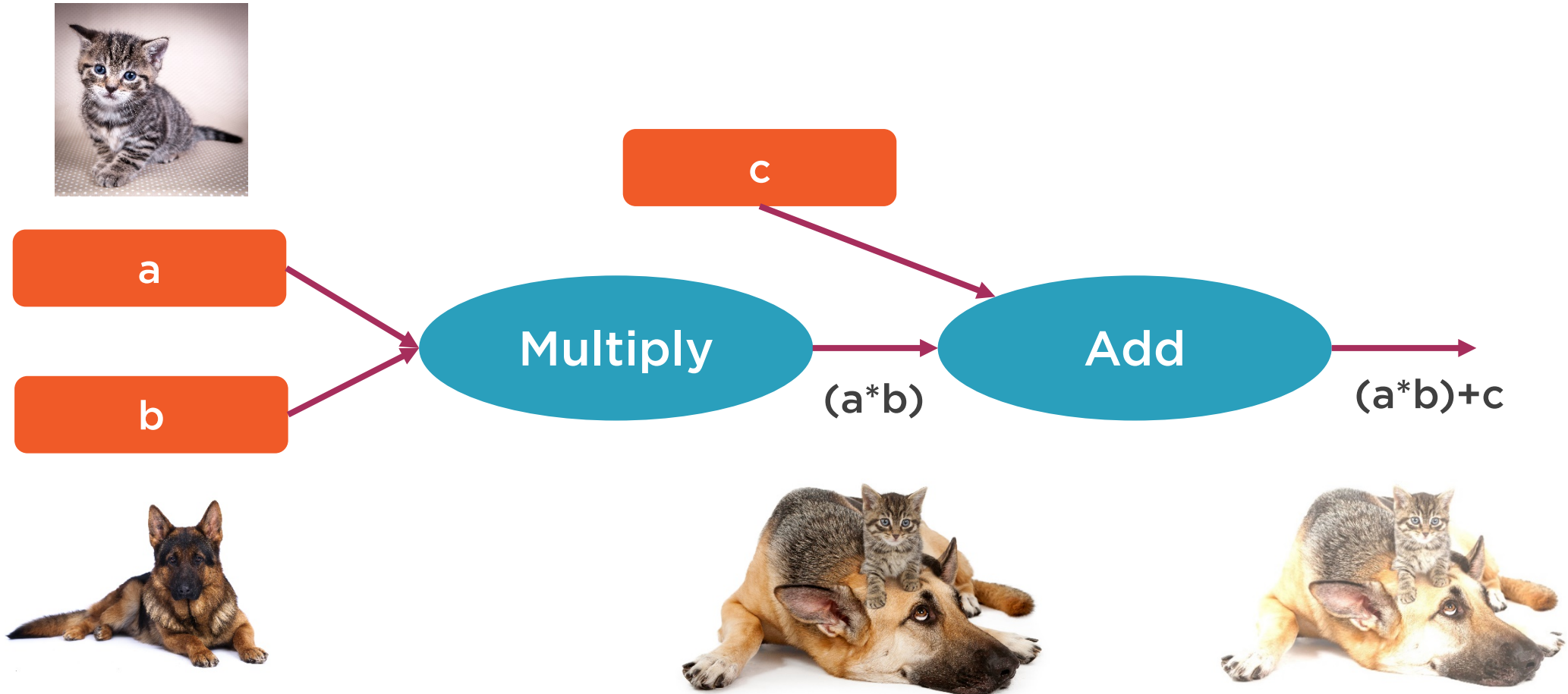
$n = 0$ Single value

$n = 1$ List of values

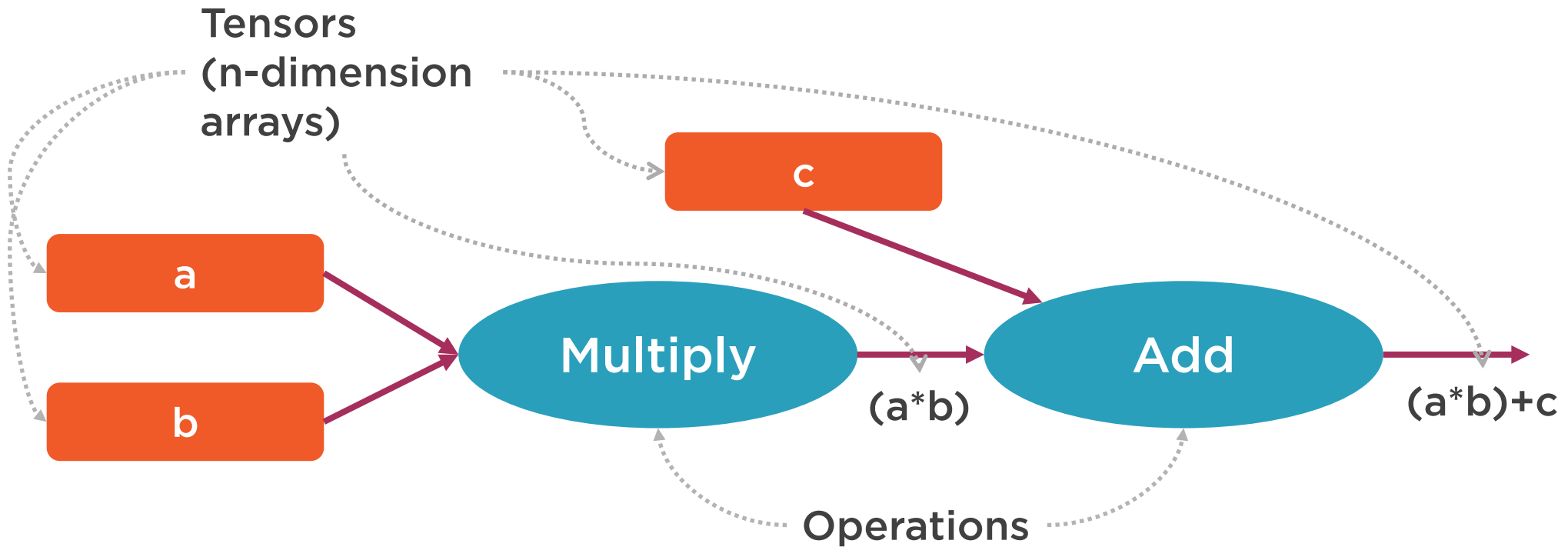
$n = 2$ Matrix of values



Computation Graph of $(a * b) + c$



Computation Graph of $(a * b) + c$



Tensors flowing between Operations => “TensorFlow”



Your Skills

Not Required

Experience in TensorFlow

Python expertise

Experience with VS Code

Advanced statistics or math

Required

Software development experience

Experience with data in tables

Basic math and statistics skills

Passion to understand

Course Modules



Introduction

Introducing TensorFlow

Creating Neural Networks

Debugging and Monitoring

Transfer Learning

Expanding with Add-ons

Summary

