

Machine Learning Workshop

30 Minutes of Overview

3 Hours of Guided Development

Theme	Session Overview	Detail	Tools
Industrializing Data Science <i>20 Minutes</i>	<p>Introduce Machine Learning tools and developer platforms available at IBM</p> <p>Bringing together the many roles necessary to move data into insights.</p>	<ul style="list-style-type: none"> • Overview of Platforms • Combine, transform, and visualize data • Access and understand data, wherever it lives • Real Time Analytics with Streams • Creation of ML models and embedding in operational processes 	PowerAI Vision Watson Studio Anaconda Environments Apache Spark Data Refinery Data Catalog Watson Knowledge Catalog Jupyter Notebooks Cloud Object Storage
Lab: Watson Studio <i>60 Minutes</i>	<p>Introduction to Watson Studio, and Watson Machine Learning.</p> <p>How to train, deploy, and consume a Machine Learning model.</p>	<ul style="list-style-type: none"> • Creation of Watson Studio environment • Exploring and transforming data • Using Jupyter Notebooks • Building, training and evaluating a Machine Learning Model • Deploying and consuming a Machine Learning Model as a WebService 	Watson Studio Watson Machine Learning Cloud Object Storage Apache Spark IBM Cloud CLI Watson Machine Learning SDK Jupyter Notebooks
Lab: Deep Learning as a Service (DLaaS) <i>60 Minutes</i>	<p>Introduction to training evaluating, and deploying a Deep Learning Model with GPUs using DLaaS in Watson Studio.</p>	<ul style="list-style-type: none"> • Submit a deep learning training job • Monitor Deep Learning training • Hyperparameter tuning 	Deep Learning as a Service
Lab: Deploying and Consuming Deep Learning Models <i>60 Minutes</i>	<p>Packaging and deploying deep learning models in containers as an API locally or in Kubernetes</p>	<ul style="list-style-type: none"> • Packaging Deep Learning Models • Wrapping Deep Learning Models as an API • Deploying Deep Learning backed APIs in Containers 	Containers Kubernetes Python Flask

- (A) The Machine Learning Developer
- (B) Tools of the Trade
- (C) Demo
- (D) Code
- (E) Community



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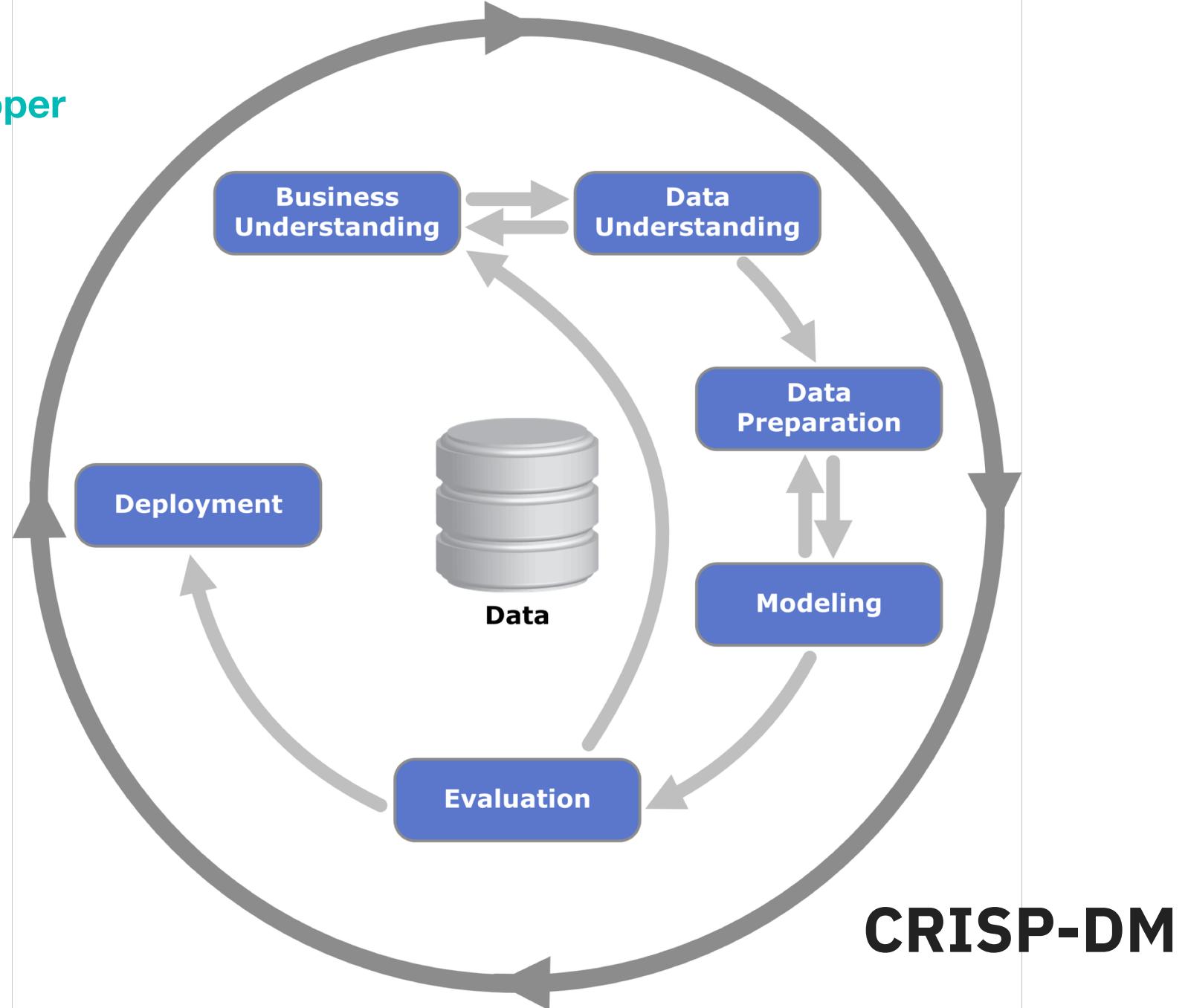
A The Machine Learning Developer

B Tools of the Trade

C Demo

D Code

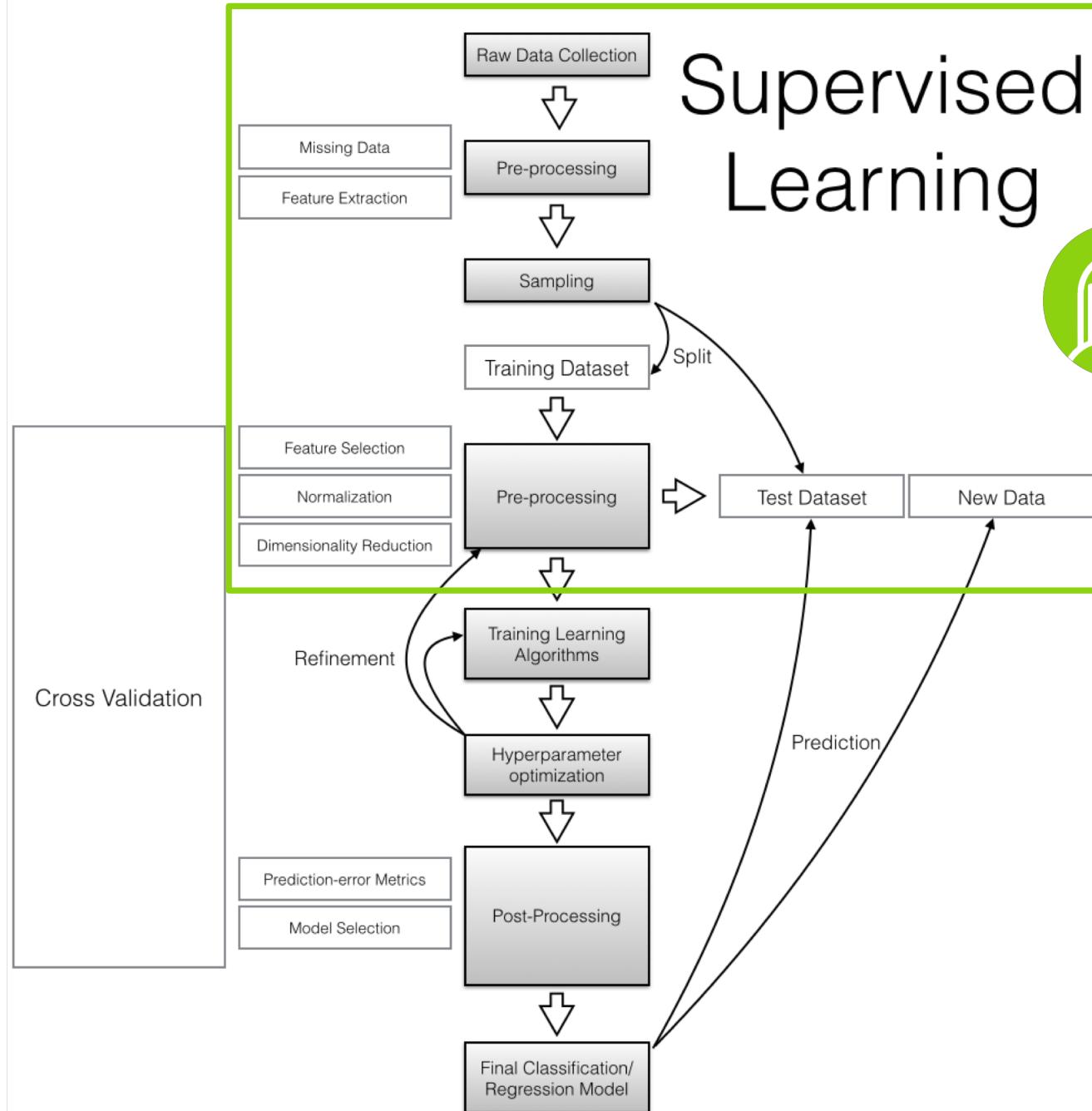
E Community



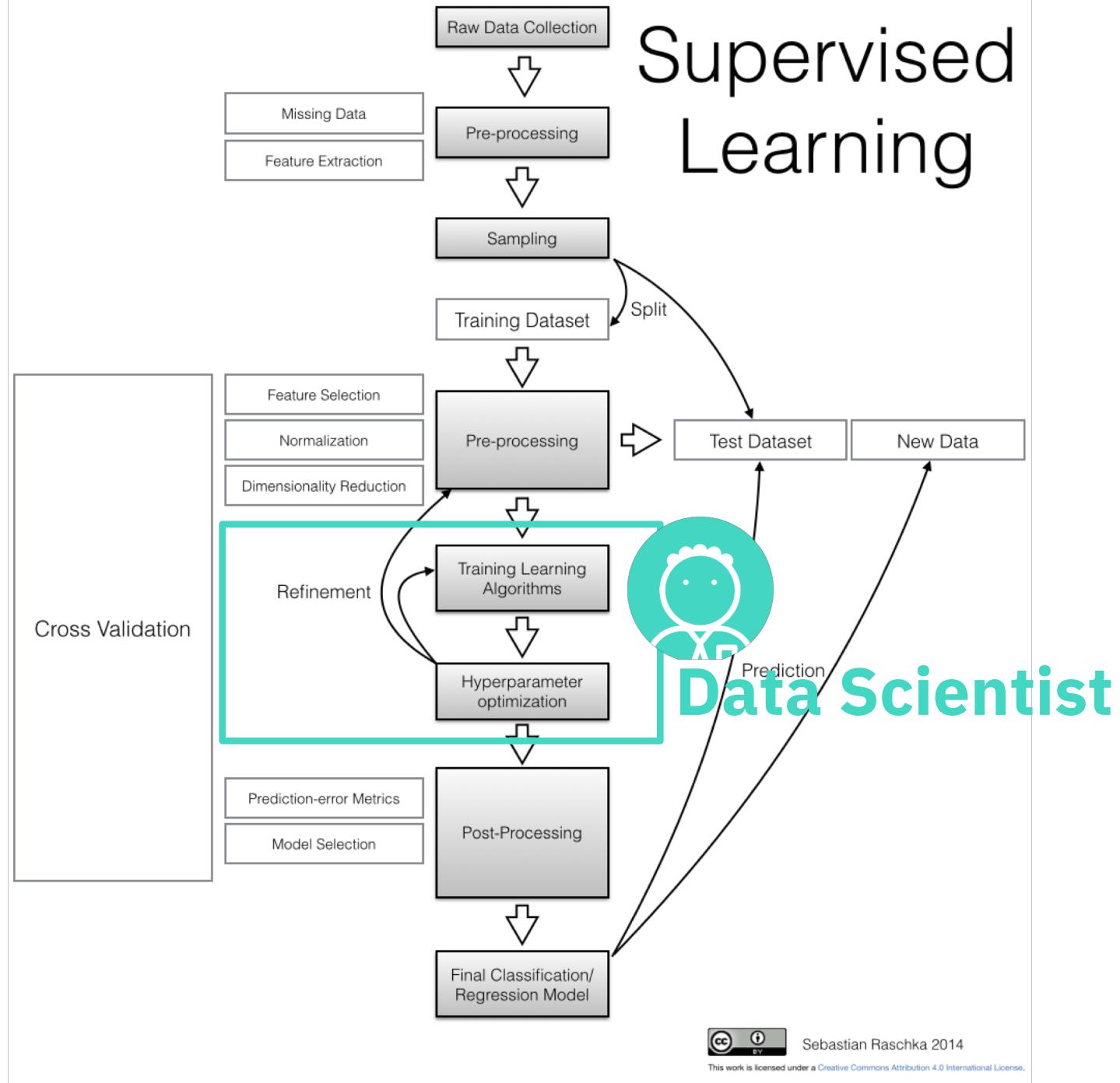
Supervised Learning



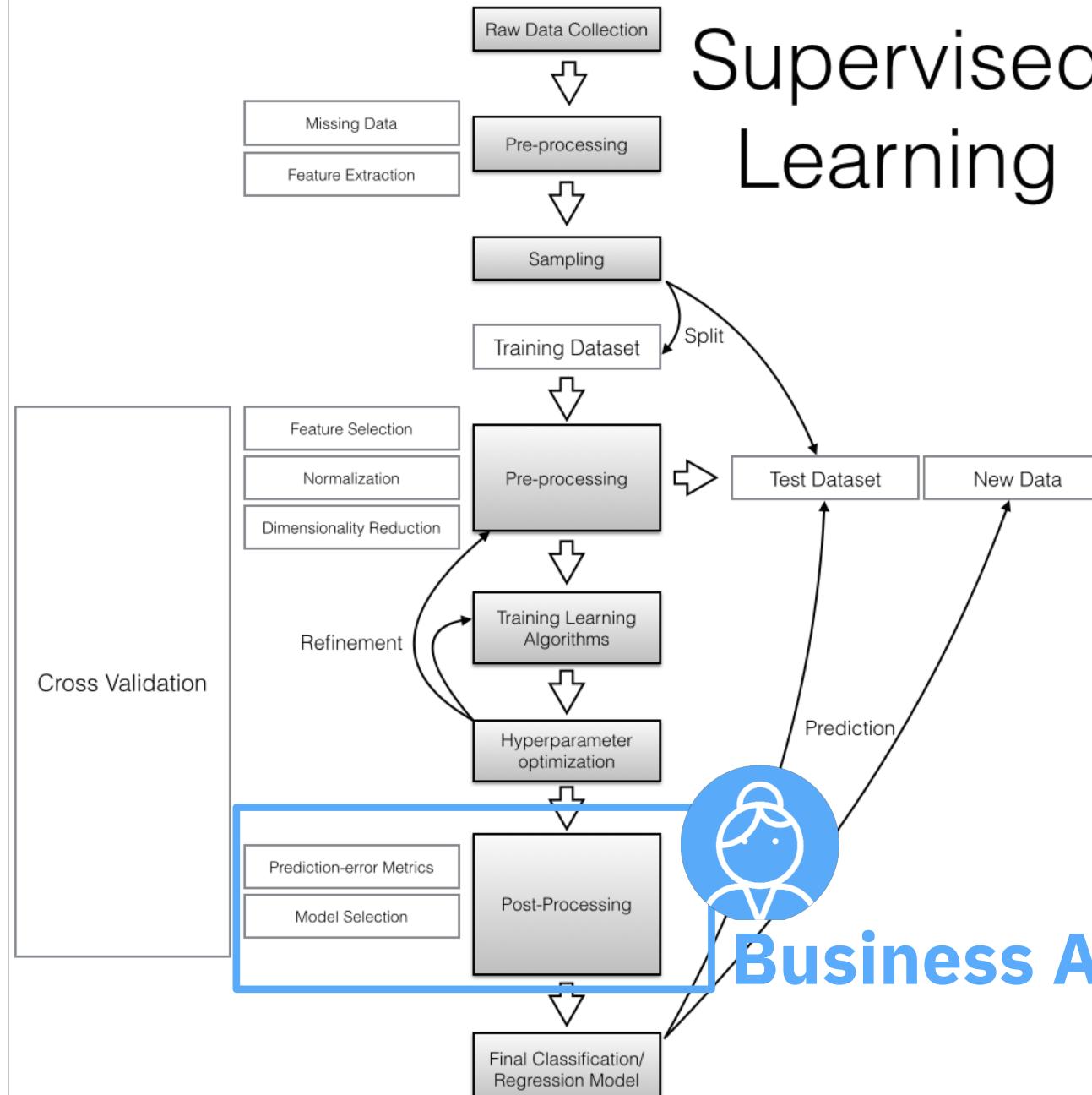
Data Engineer



Supervised Learning

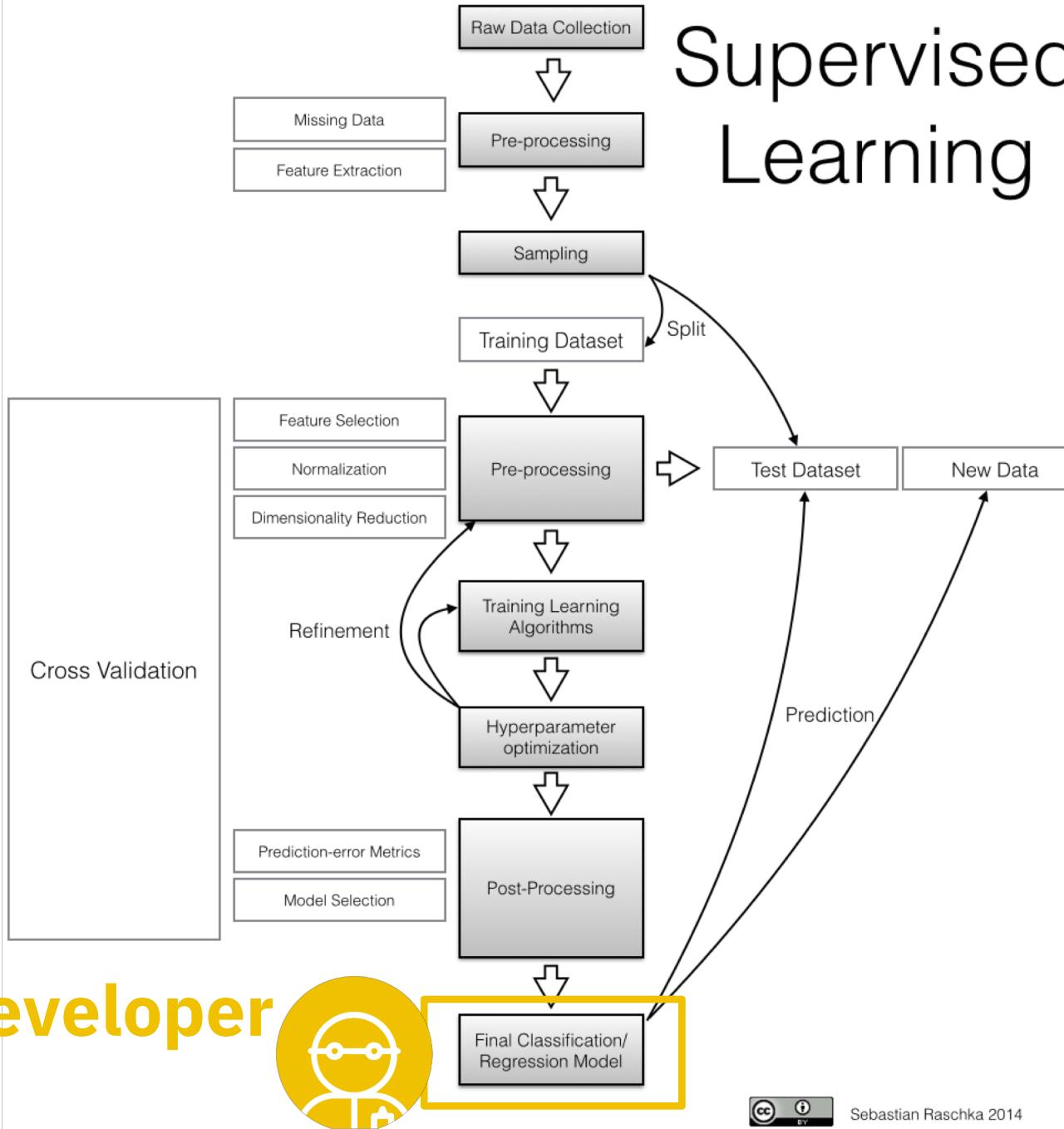


Supervised Learning



Supervised Learning

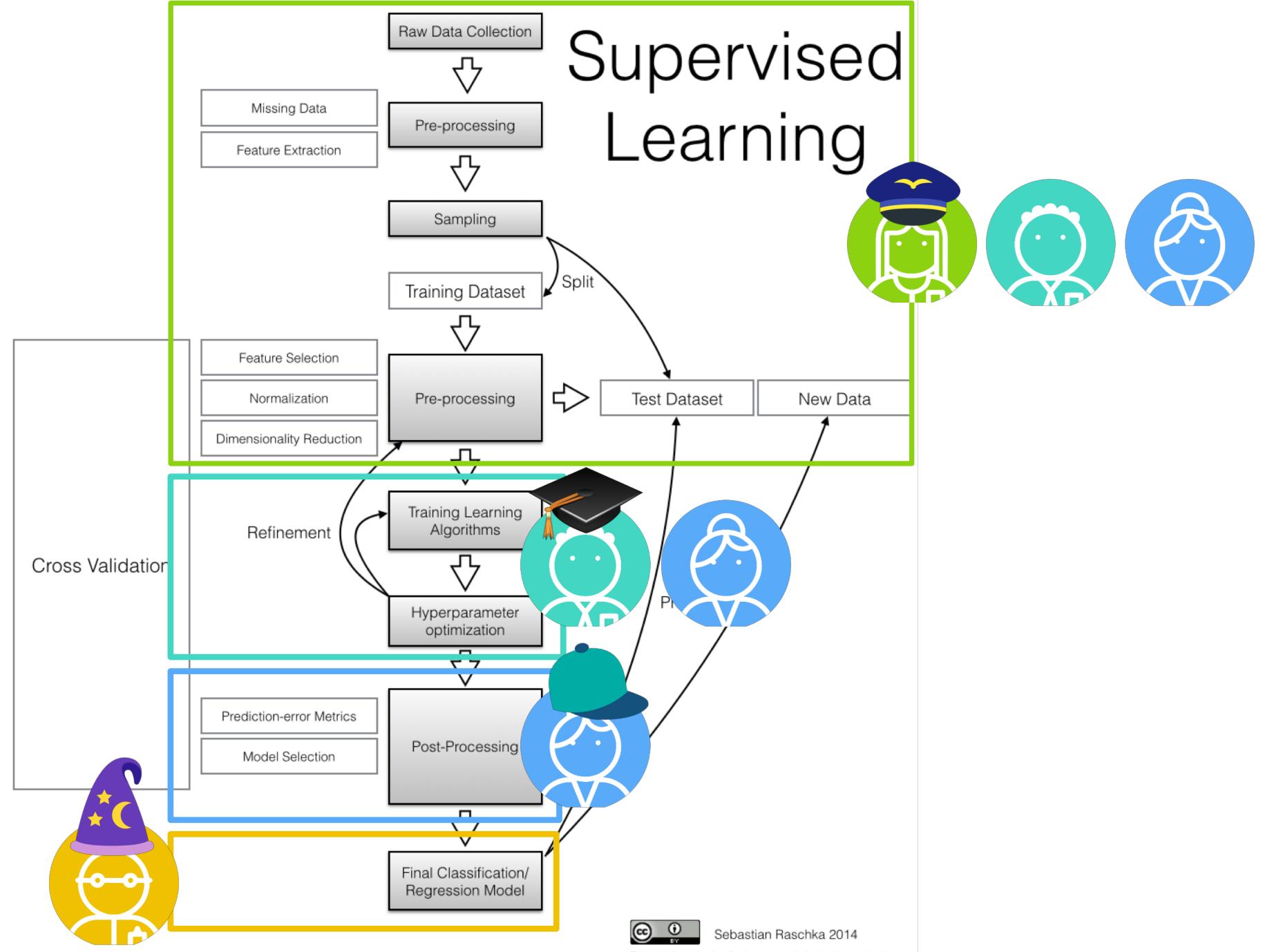
App Developer



Sebastian Raschka 2014

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Supervised Learning



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What
does this
mean for
you?



A The Machine Learning Developer

B Tools of the Trade

C Demo

D Code

E Community



Knowledge Catalog

Seek, Classify, Govern



Watson Studio

Build, Deploy, Learn



Watson OpenScale

Deploy, Operationalize, Automate



Watson ML Accelerator

Accelerate, Scale



(A) The Machine Learning Developer

(B) Tools of the Trade

(C) Demo

(D) Code

(E) Community

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(B) Tools of the Trade

(C) Demo

(D) Code

(E) Community

Industrializing Data Science and Machine Learning

Machine Learning, and Data Science have been hot topics for the past 10 years, but what does it mean to the developer?

- Where does one get started?
- How do you transform data into insights?
- What does a Machine Learning model look like?
- How do you share the insights of a model with the world?

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Lab1

Turn raw data into insights; build, deploy, and consume a Machine Learning model

Lab2

Training and deploying Deep Learning models to make predictions as an API web service

Lab3

Package a Deep Learning model into a container, and deploy to Kubernetes, or run offline

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The Call for Code 2019 Global Challenge is now open for submissions. [Learn more](#)

IBM Developer Topics ▾ Community ▾ More open source at IBM ▾

Events

Technologies ▾ Industries ▾ Deployment Models ▾ Past Upcoming ▾ Event Type: All ▾

WORKSHOP

Weatherbot - workshop for your first step towards natural disaster management / Call for Code

March 27, 2019
San Francisco

Cloud

MEETUP

Meetup: ChiJS: Serverless Applications

March 27, 2019
Chicago

Cloud IBM Cloud +

WEBCAST

Enabling Trust and Transparency in AI using IBM AI OpenScale

March 27, 2019

Analytics Artificial intelligence +

MEETUP

Artificial Neural Networks und Deep Representations

March 27, 2019
Berlin

Analytics Artificial intelligence +

MEETUP

IBM PowerAI Joins the Watson Family @In5 Tech DIC - Dubai, UAE - 03/27/2019

March 27, 2019
Dubai

Artificial intelligence IBM PowerAI +

WEBCAST

Micro Sessions with JanusGraph

March 27, 2019

Apache Cassandra Cloud +

WEBCAST

Introduction to GraphQL, a query language for APIs

March 27, 2019

Cloud IBM Cloud +

MEETUP

Use the Next MongoDB Data Platform to Accelerate

March 27, 2019
Berlin

Containers Databases +

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Thank You

Justin McCoy

IBM Developer



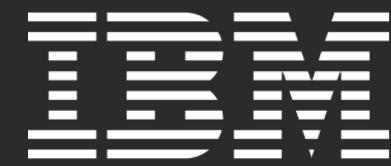
justin.mccoy@us.ibm.com



[justinmccoy](https://github.com/justinmccoy)

think





IBM PowerAI

Open source software optimized for Power HW; well suited to developers and data scientists just getting started with their development efforts and prototypes.

Free Download

- ✓ RPM
- ✓ Docker (nvidia-docker v2)
- ✓ IBM Cloud Private
- ✓ Trial on IBM Cloud
- ✓ S822LC/AC922
- DDL 1-4 nodes
- Large Model Support

IBM PowerAI Enterprise

Fully supported suite of deep learning frameworks intended for Enterprises looking to rapidly scale their AI applications.

Free Trial

- ✓ Evaluation/Trial on-prem
- ✓ IBM Cloud Private
- ✓ S822LC/AC922
- DDL 1-1000's of nodes
- Large Model Support
- Elastic Distributed Training

IBM PowerAI Vision

Fully supported enterprise-grade suite of tools for labeling raw datasets for training, creating, and deploying deep learning-based vision models.

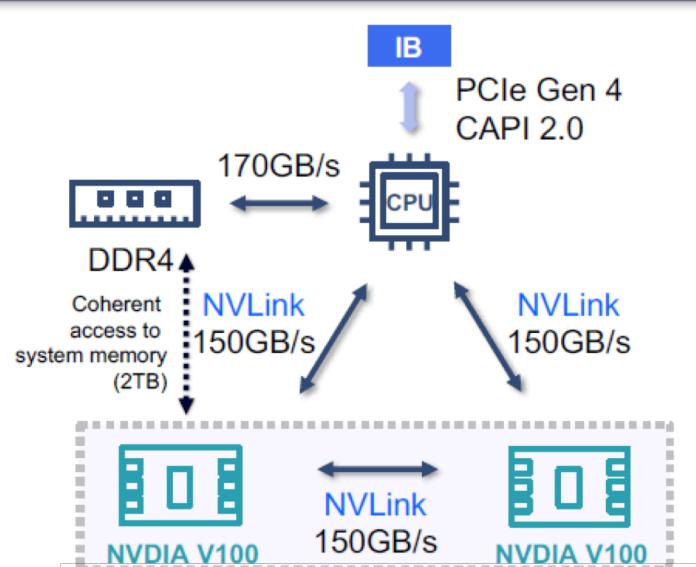
Free Trial

- ✓ S822LC/AC922

4 GPUs @150GB/s

CPU ↔ GPU bandwidth

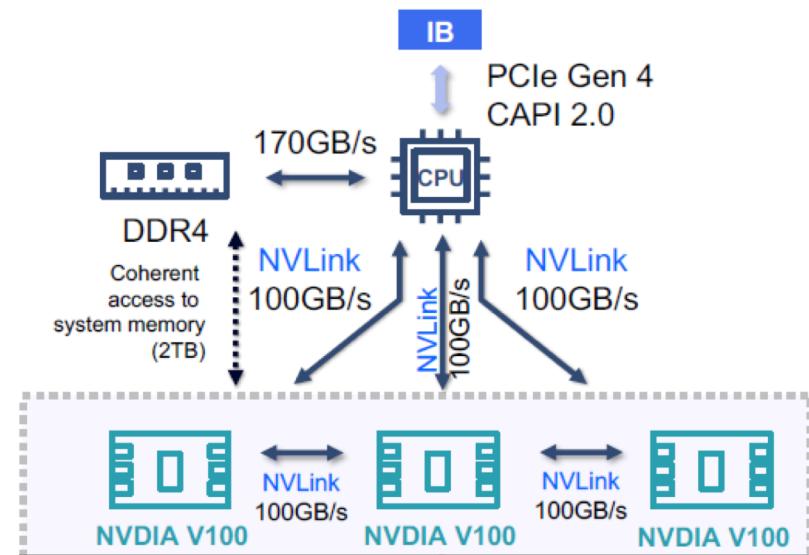
Coherent access to system memory
PCIe Gen 4 and CAPI 2.0 to InfiniBand
Air and Water cooled options



6 GPUs @100GB/s

CPU ↔ GPU bandwidth

Coherent access to system memory
PCIe Gen 4 and CAPI 2.0 to InfiniBand
Water cooled only



Distributed Deep Learning (DDL)

IBM Research solved the scale-out problem in deep learning!

Almost Linear Scale up to 100's of GPUs at 95%

Reduces training time from weeks to hours for complex deep neural networks

