Meetup

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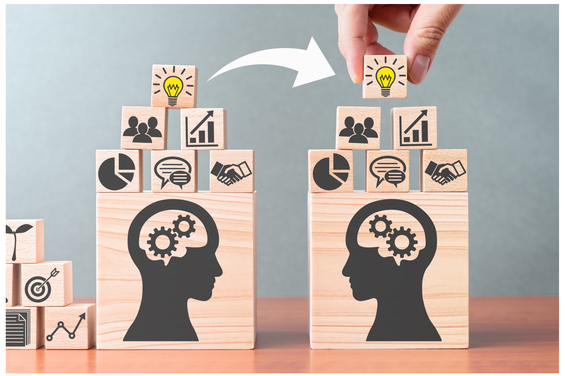
AZURE MLOPS WORKSHOP - DEVOPS FOR MACHINE LEARNING

Session Details



01	ABOUT CLOUDNLOUD	Mission of Cloudnloud About Me
02	DEVOPS	DevOps Principle, Outcome and Values, Reference Architecture
03	MLOPS	MLOps Principle, Outcome and Values, Reference Architecture
04	LAB INTRO AND BREAK	LAB Introduction Setting Prerequisites for Lab
05	WORKSHOP	Build a MLOps Pipeline using Azure DevOps - Train, Build, Deploy and Monitor
06	QA AND FEEDBACK	How to Build a MLOps Career Feedback about the session

Place Holder for Cloudnloud Communitity Information

Ayyanar J

Data Science System Engineer

Follow our Community on - https://www.linkedin.com/company/cloudnloud/

ABOUT ME

I started my career as humble Hardware and Networking engineer in 2005 in HCL Infosystem.

Over the last 17 years in my IT Career, I have worked as Wintel, Linux Middleware Engineer, Infrastructure Architect, Cloud Solution Architect, Bigdata Manager, DevOps Leads, and DataPlatform Lead Engineer. I worked in Europe, Canada, and the US for a brief period of time.

I always love to learn - Unlearn - Relearn, Motivated to Share knowledge with peers, community and learn from them.

I have 50+ Technical Certification in AWS, Azure, IBM Cloud, CKA/CKAD, TOGAF Level 2 Certified

Currently, I am working as an individual consultant for Europe based Company

WHAT YOU LEARN TODAY

- What is Machine Learning Operation (MLOps)
- How to apply DevOps Principle in Machine learning Operation
- Workshop - Implement the basic Machine Model using MLOps Practice

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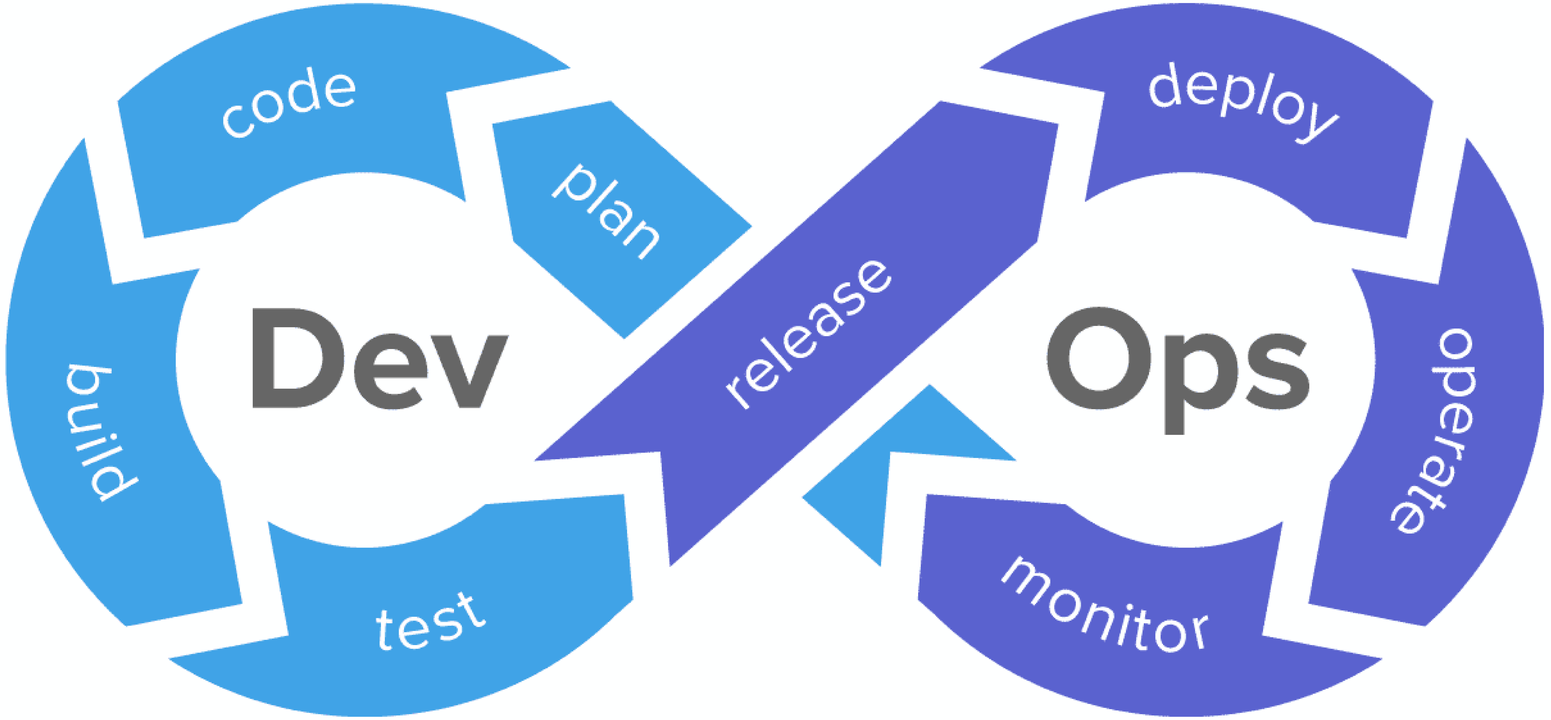
Know Your Audience

Developers (Fronend, Backend, FullStack, Mobile, Web)

SRE, DevOps, Cloud Engineer, Architects

Data Engineers, Data Scientists, Machine learning Engineer

How Many People Seen this Before



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DEVOPS PRACTICE

- Continuous Development
- Continuous Code Testing - Quality
- Continuous Code Testing - Security
- Continuous Integration
- Continuous Delivery
- Continuous Deployment
- Continuous Monitoring
- Infrastructure as Code

DEVOPS OUTCOMES

- Faster Product Delivery
- Automation to Improve effeciency
- Shift Left approach
- Quality Deliverable
- Greater innovation

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DEVOPS-USE CASE

- **E-Yacht-Insure (EYI) is an insurance startup company that provides insurance for the premium customer who owns Yacht.**

- EYI already builds Web and Mobile applications using Modern Cloud Native Architecture and Deployed n AKS. CTO instructs the architects to build a backend application that provides the same level of **Cloud interoperability** as the Frontend. They want to leverage Back-end developers currently using Python applications.

- CTO asked DevOps Team to make sure **applications need to deploy multiple times in production with zero downtime, are fully tested, and secured.**

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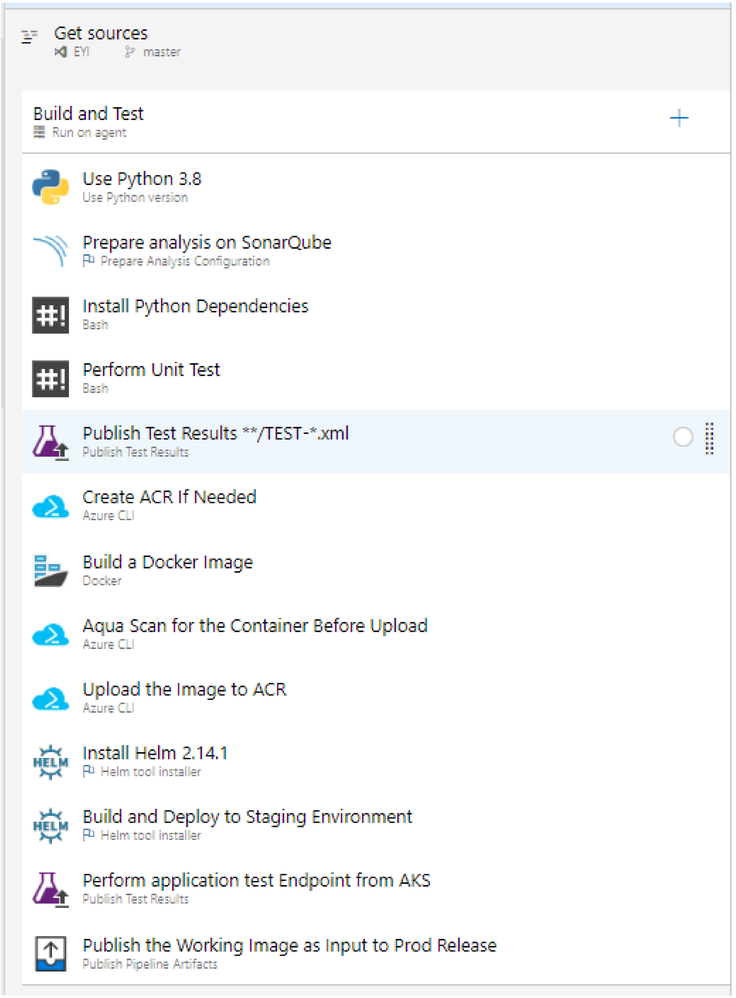
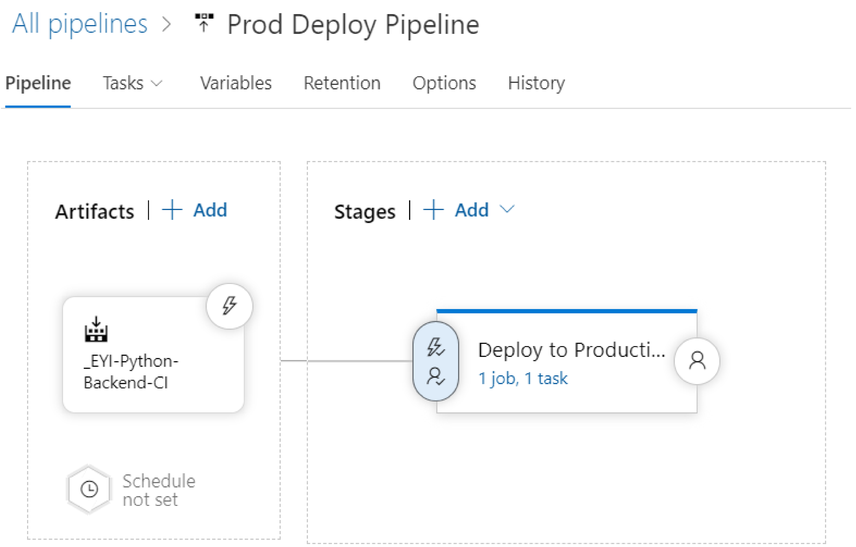
Azure DevOps - Reference Architecture - Microservices WebApp



Continuous Integration + Testing.



Continuous Deployment

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MLOPS-USE CASE

- Since we have HNI customers, They want to provide added value service by predicting the probability of insurance claim every year and charging accordingly.

- EYI **Data Engineer** collects the data based on a customer insurance claim input and performed the data processing/ **feature engineering** pipeline and stores the data in AZ Datalake.

- **Chief Data Scientist and ML Engineers build a model and want to follow DevOps practice for Data processing and deploy their Model .**

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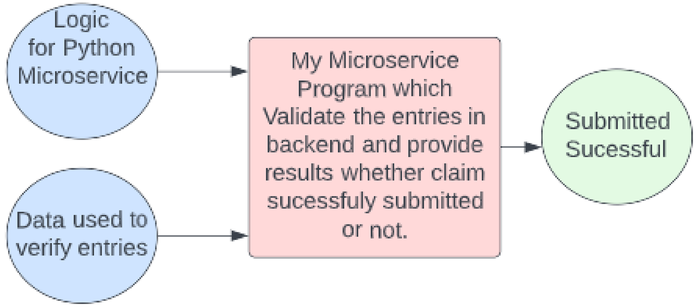
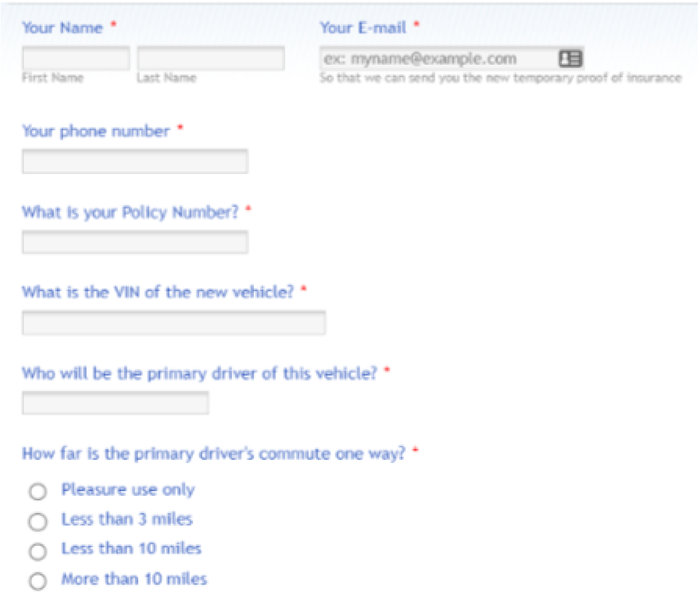
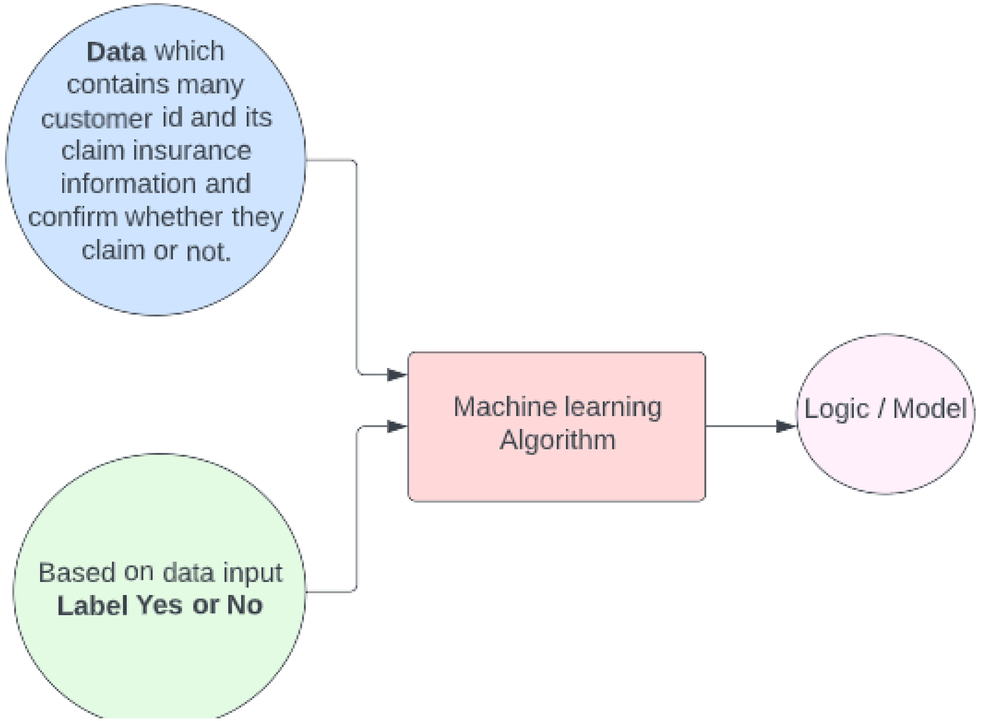
Machine Learning 101







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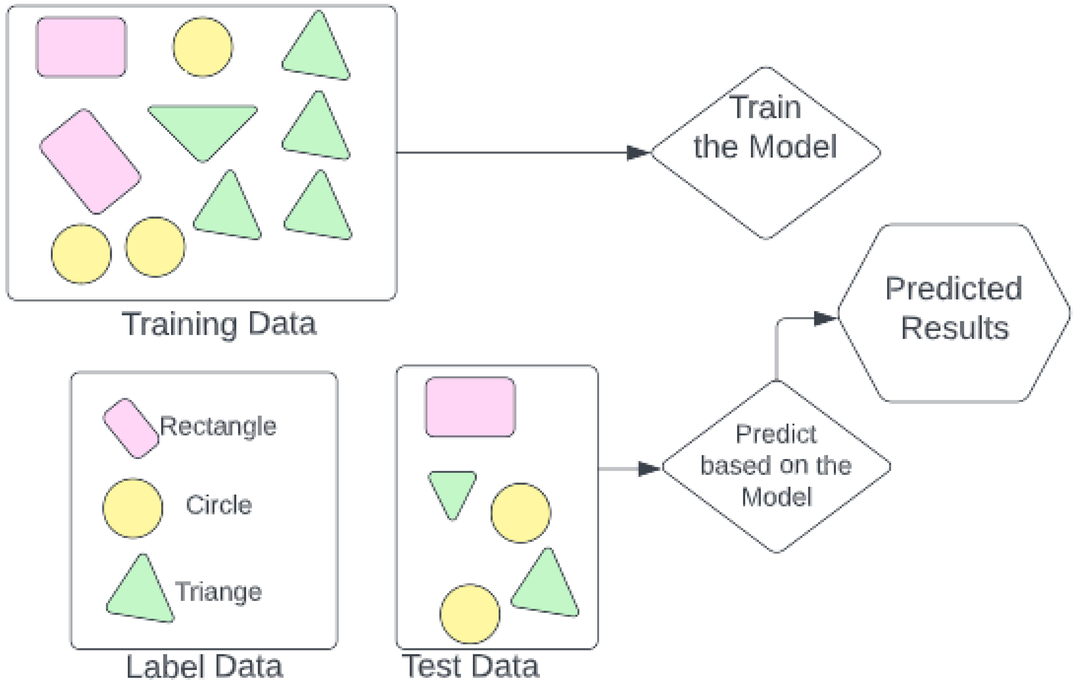
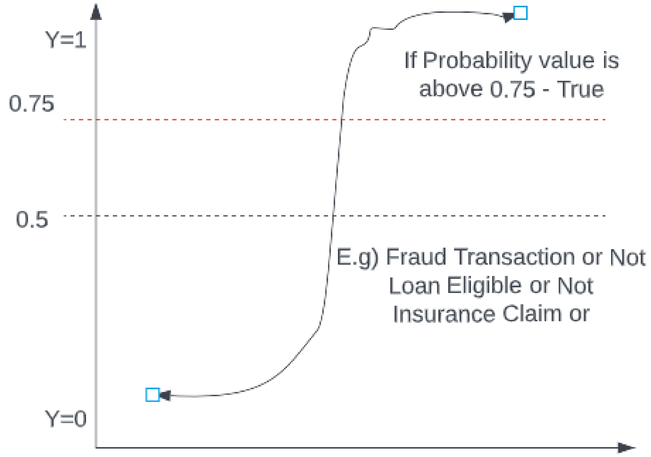
SUPERVISED LEARNING



LINEAR REGRESSION

LOGISTIC REGRESSION



CLASSIFICATION

REGRESSION

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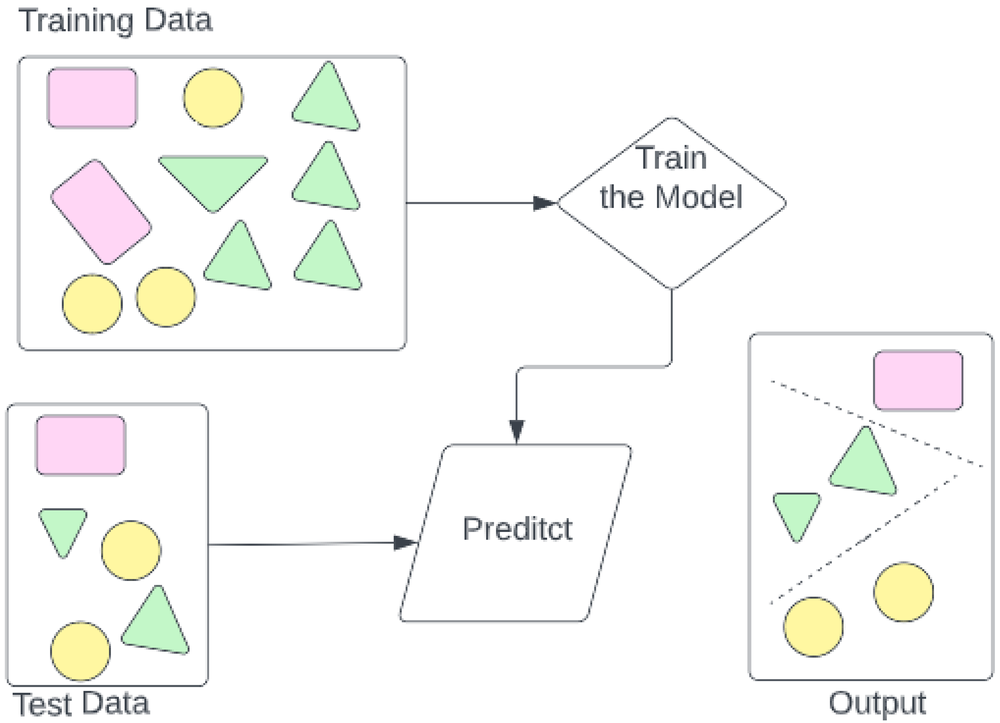
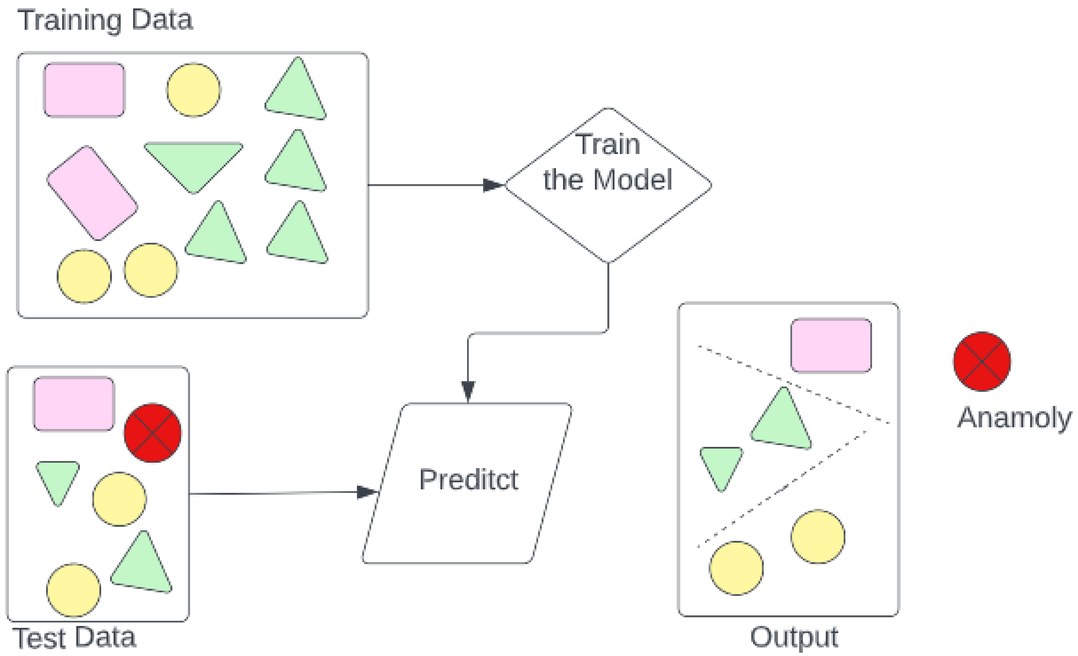
UNSUPERVISED LEARNING



CLUSTERING



ANAMOLY DETECTION

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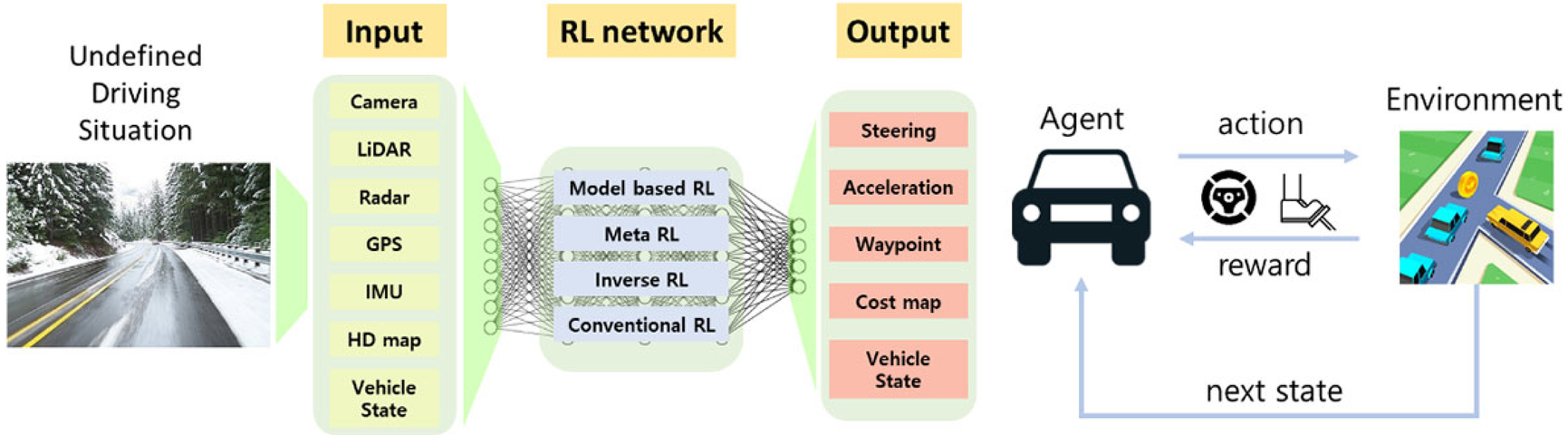
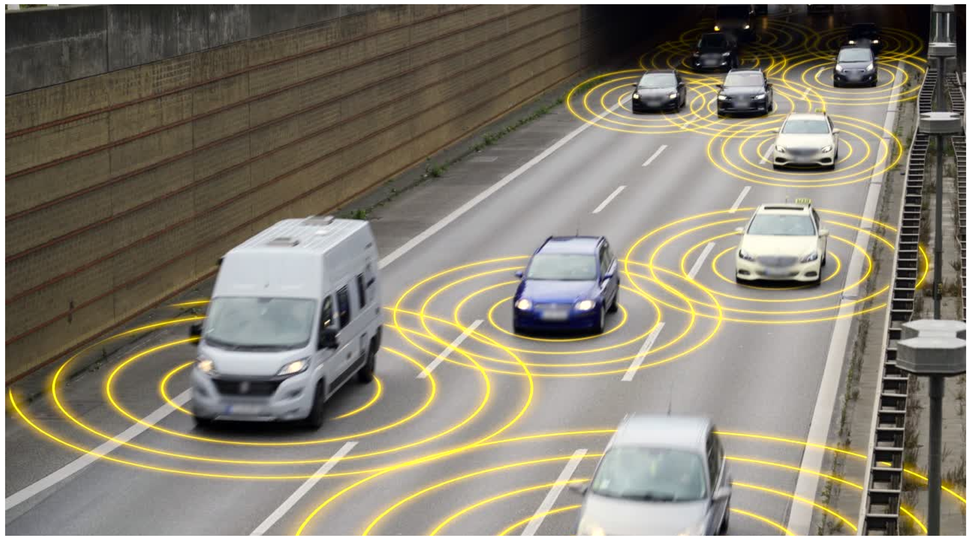
REINFORCEMENT LEARNING

Reward ~~ Action





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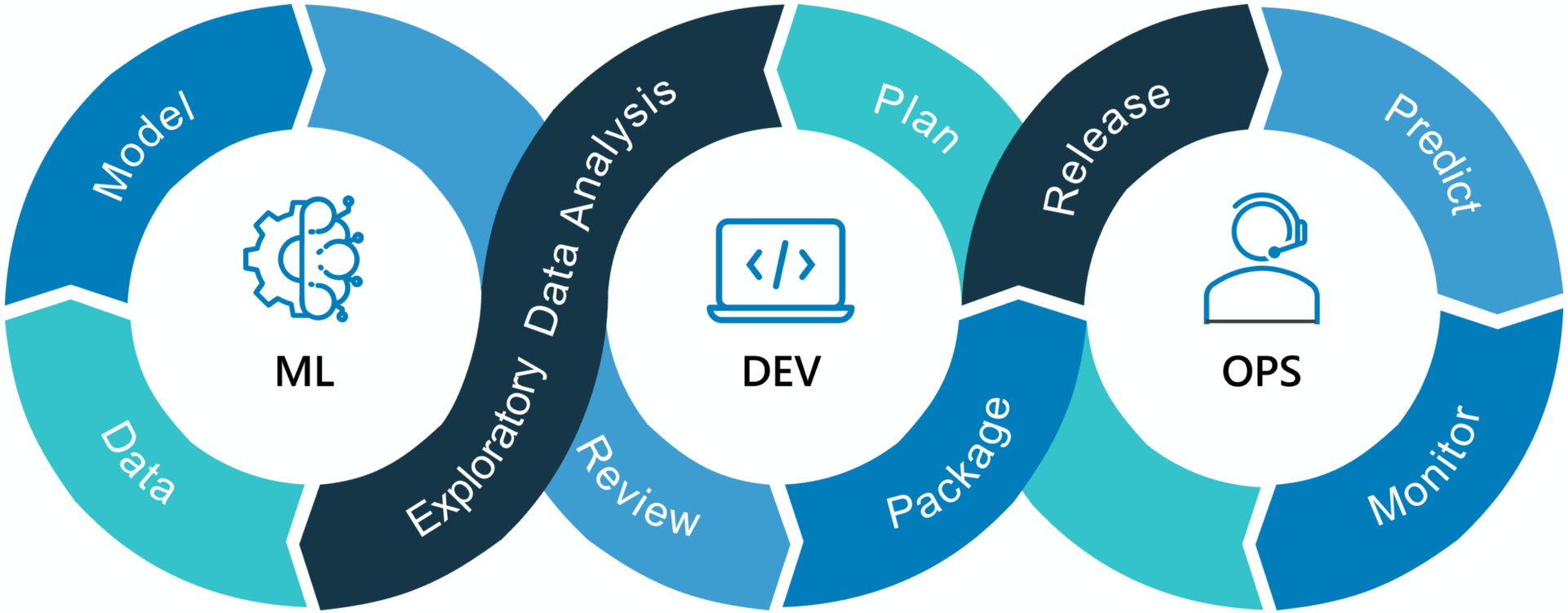
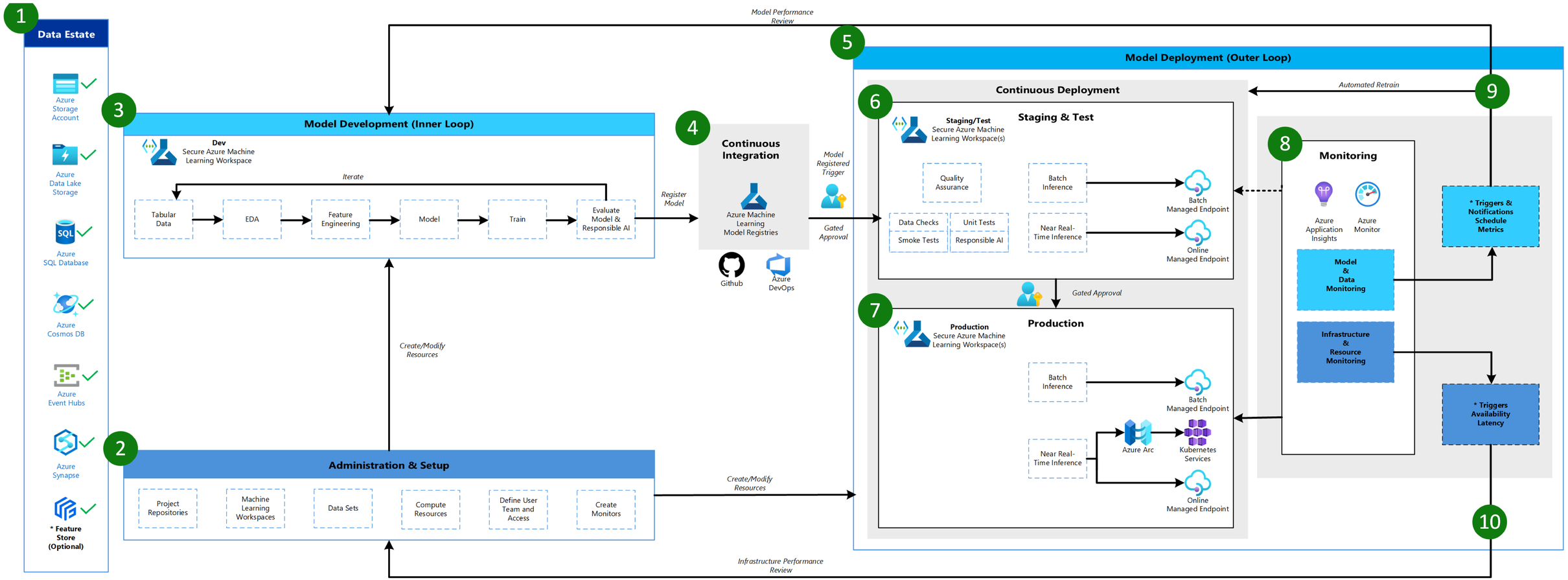
Machine Learning Operation 101



Azure MLOPS Reference Architecture



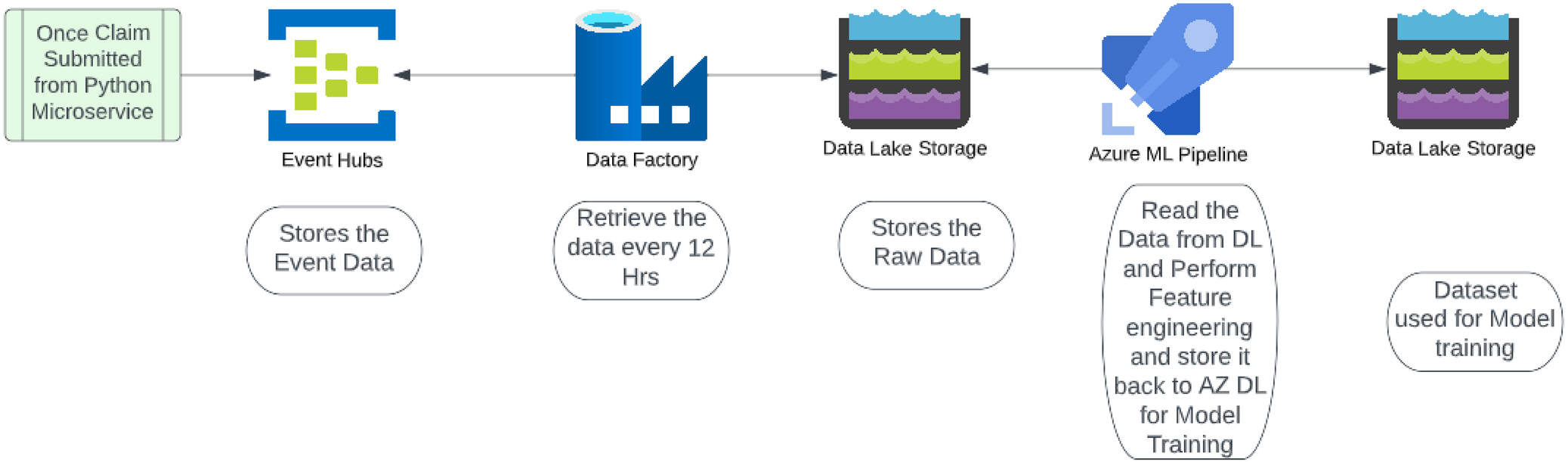
Legend:	Data Engineer	Data Scientist	ML Engineer	Infrastructure Team

* Future Accelerator Implementation

✓ Recommended Practice

Ref: https://github.com/Azure/mlops-v2

Data Processing



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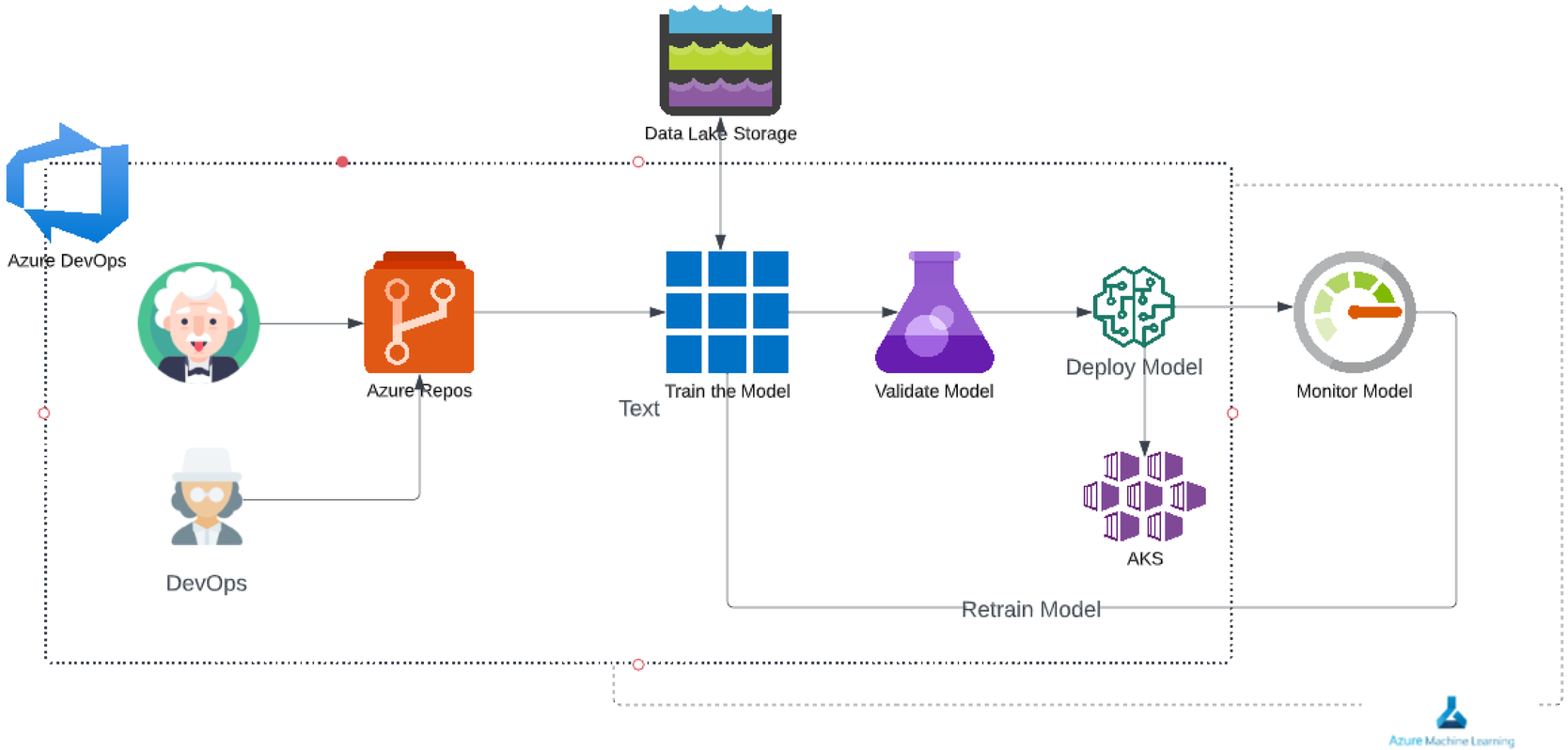
Simple MLOps - Task of the Day



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TODAY - WORKSHOP -ROAD MAP

1. Create Azure Subscripton
2. Create DevOps Organization
3. Create Azure ML Workspace and Service Connection - Manually and IaaC
4. Build a MLOps Pipeline
5. Deploy the Model
6. Validate the Model, Monitor

https://forms.gle/nNBvtMJ8XvoaML1e7

Github Wiki

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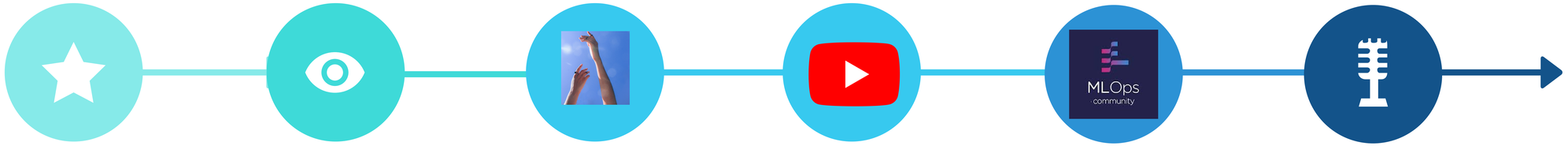
LEARNING PLAN - MLOPS



Understand Machine Learning	Understand DeepLearning	Get More Hands on with DevOps	Follow Youtube Videos	Be Part of COmmunity	Keep Sharing Knowledge
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Place Holder for AZ Conf Event

Feedback

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