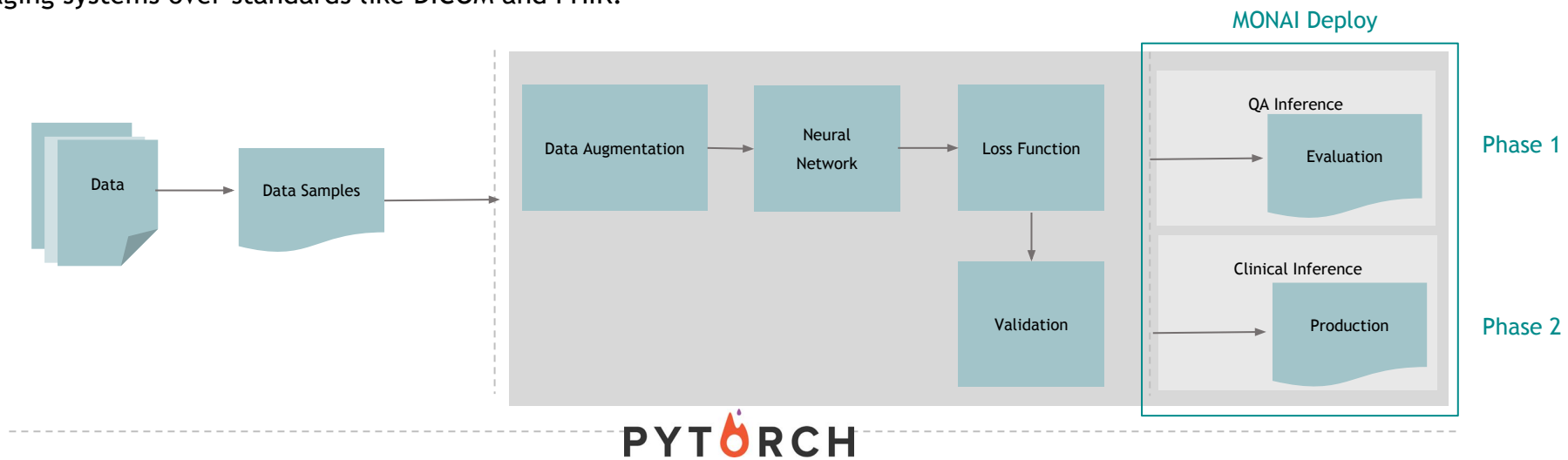
MICCAI Bootcamp 2021

Deploy WG

MONAI Deploy WG

Bridging the gap from research innovation to clinical production

- MONAI Deploy aims to become the de-facto standard for developing, testing, deploying and running medical AI applications in clinical production.
- *For Researchers & developers,* MONAI Deploy provides an easy way to develop MONAI Deploy application packages (MAPs)
- *For Hospital Operations,* MONAI Deploy will define what a clinical infrastructure to run AI should look like, and how to interoperate with medical imaging systems over standards like DICOM and FHIR.



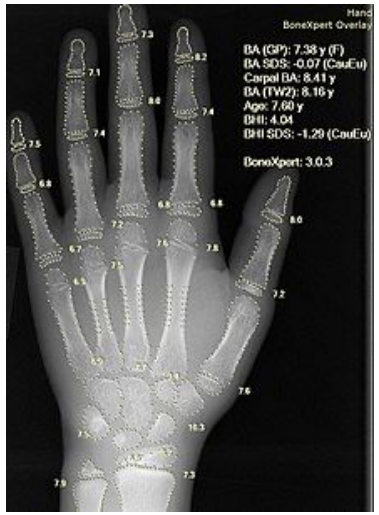
A new OS for the hospital

Scaling up the impact of AI in healthcare

1895

DICOM
Digital Imaging and Communications in Medicine

1995



2012

MONAI
Deploy

2021

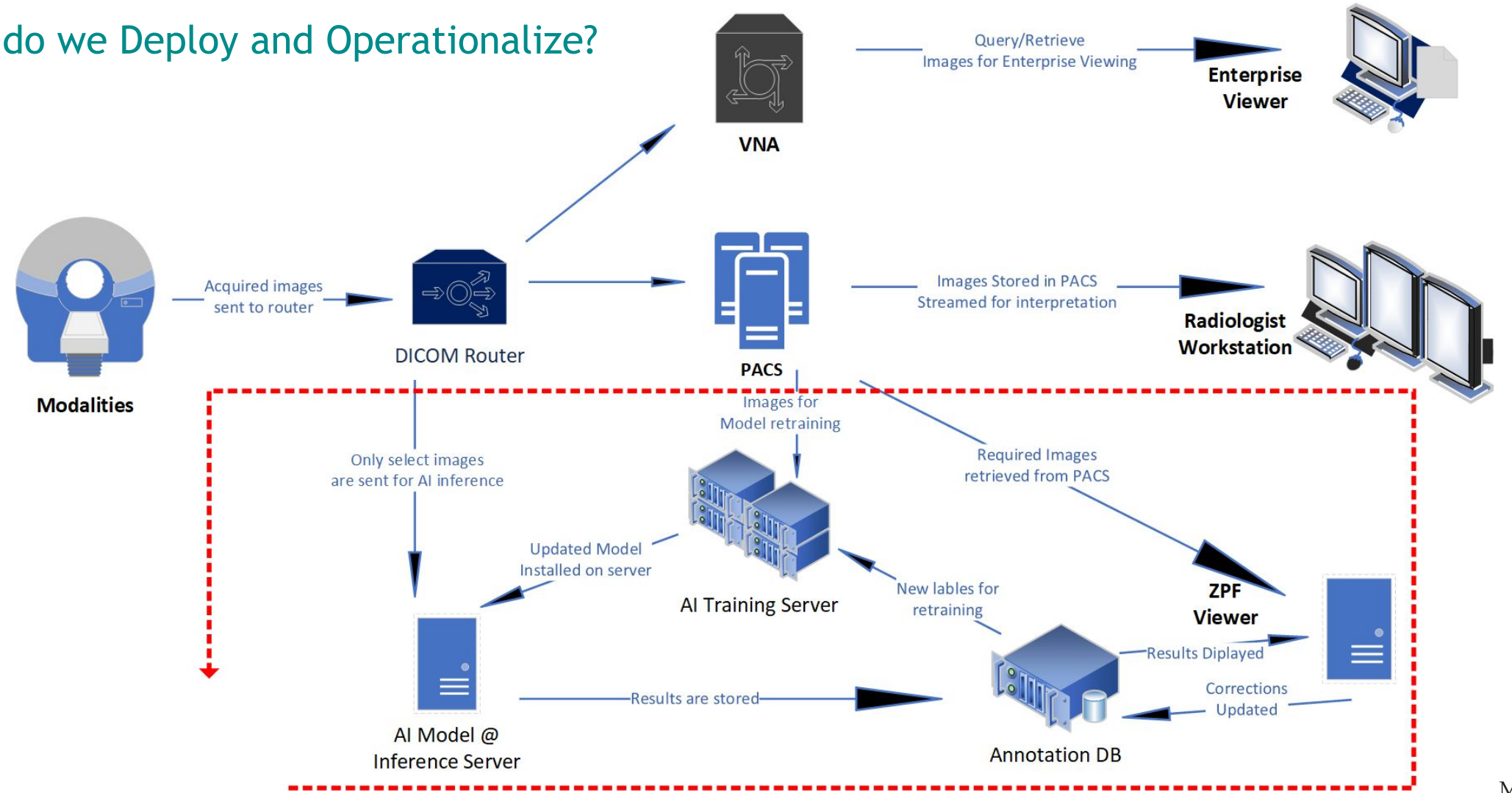
1. One of the earliest photographic plates from Roentgen's experiments was a film of his wife, Bertha's hand with a ring, produced on Friday, November 8, 1895.
2. Setzner1337, CC0, via Wikimedia Commons

Guy's and St Thomas' NHS Foundation Trust

King's College London

Current landscape

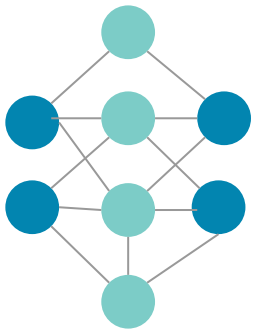
How do we Deploy and Operationalize?



Chasm between Model & Deployable App

87% of data science projects never make it to production

Trained Model



Selecting the right DICOM datasets

Loading DICOM Datasets

Pre processing Input Images

Performing Inference

Post Processing Results

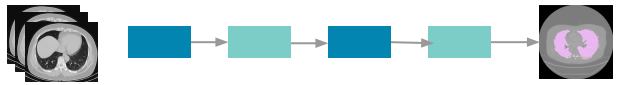
Exporting AI results to DICOM

Visualizing inference results

Optimization

...

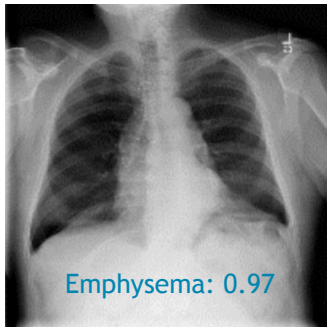
Deploy Ready App

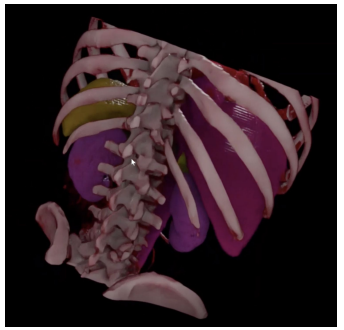


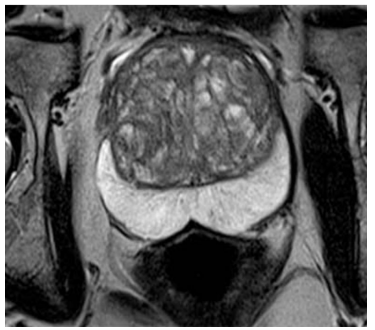
What is MONAI Deploy App SDK

Build, verify & package a deploy-ready AI application in healthcare using Pythonic SDK

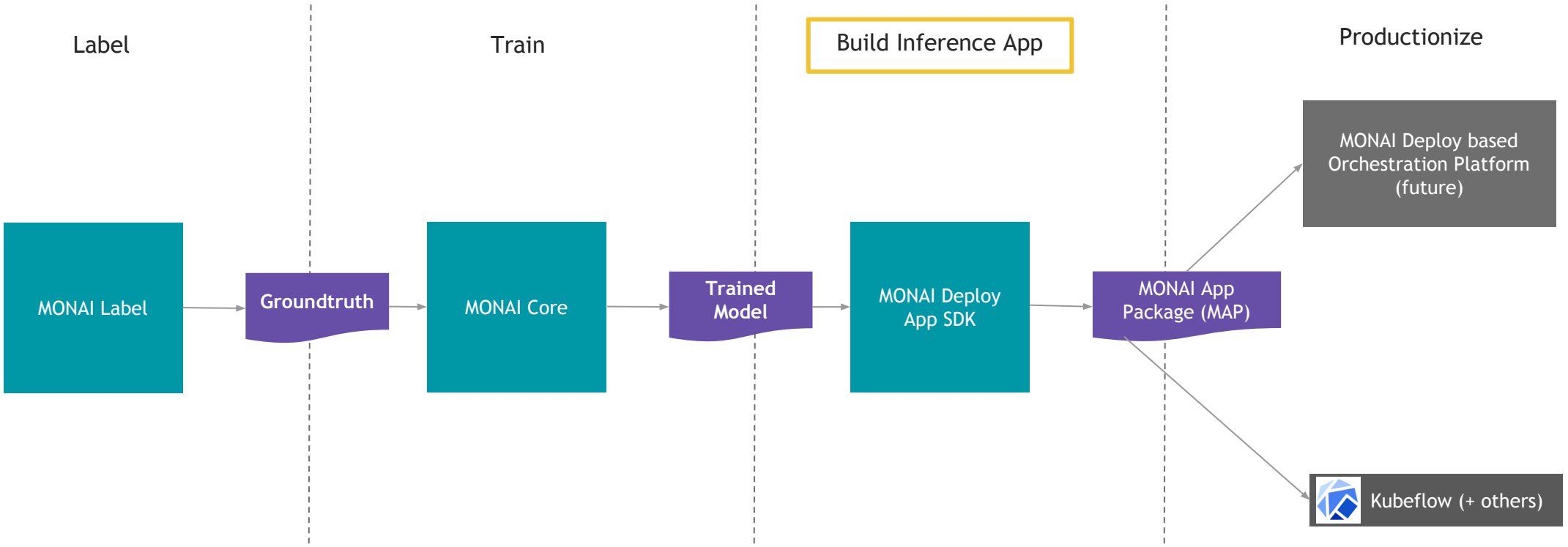
- Focus on usability
- Enable high performance
- Facilitate debugging
- Ready for production



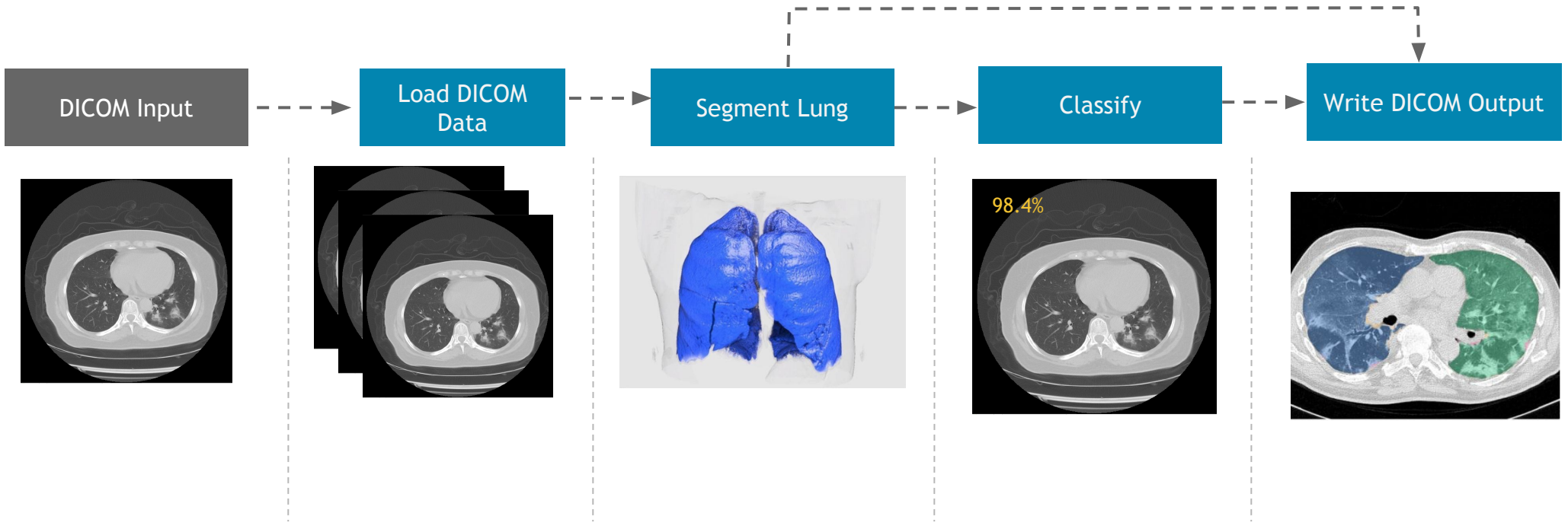




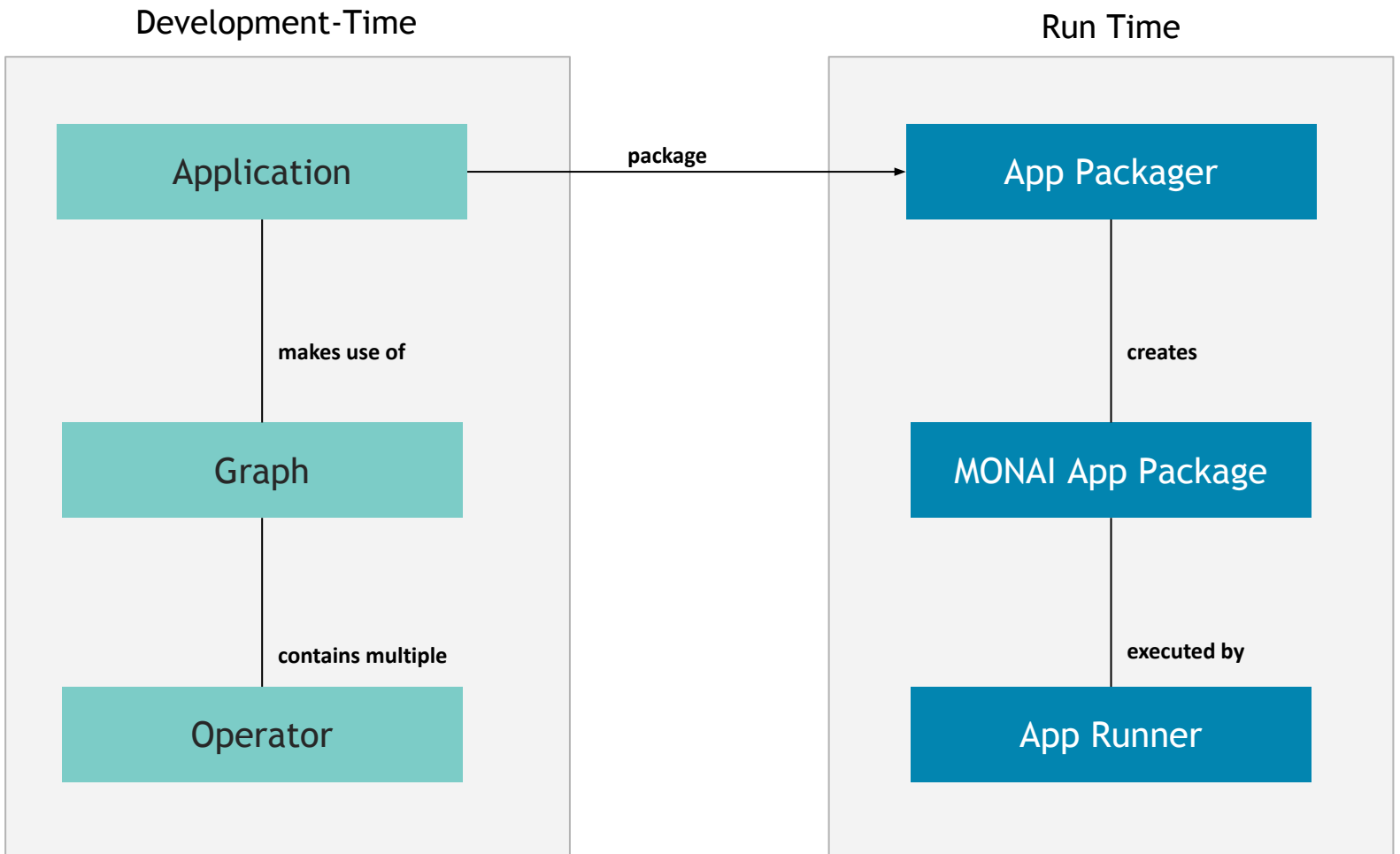
Big Picture: from data to deployed app



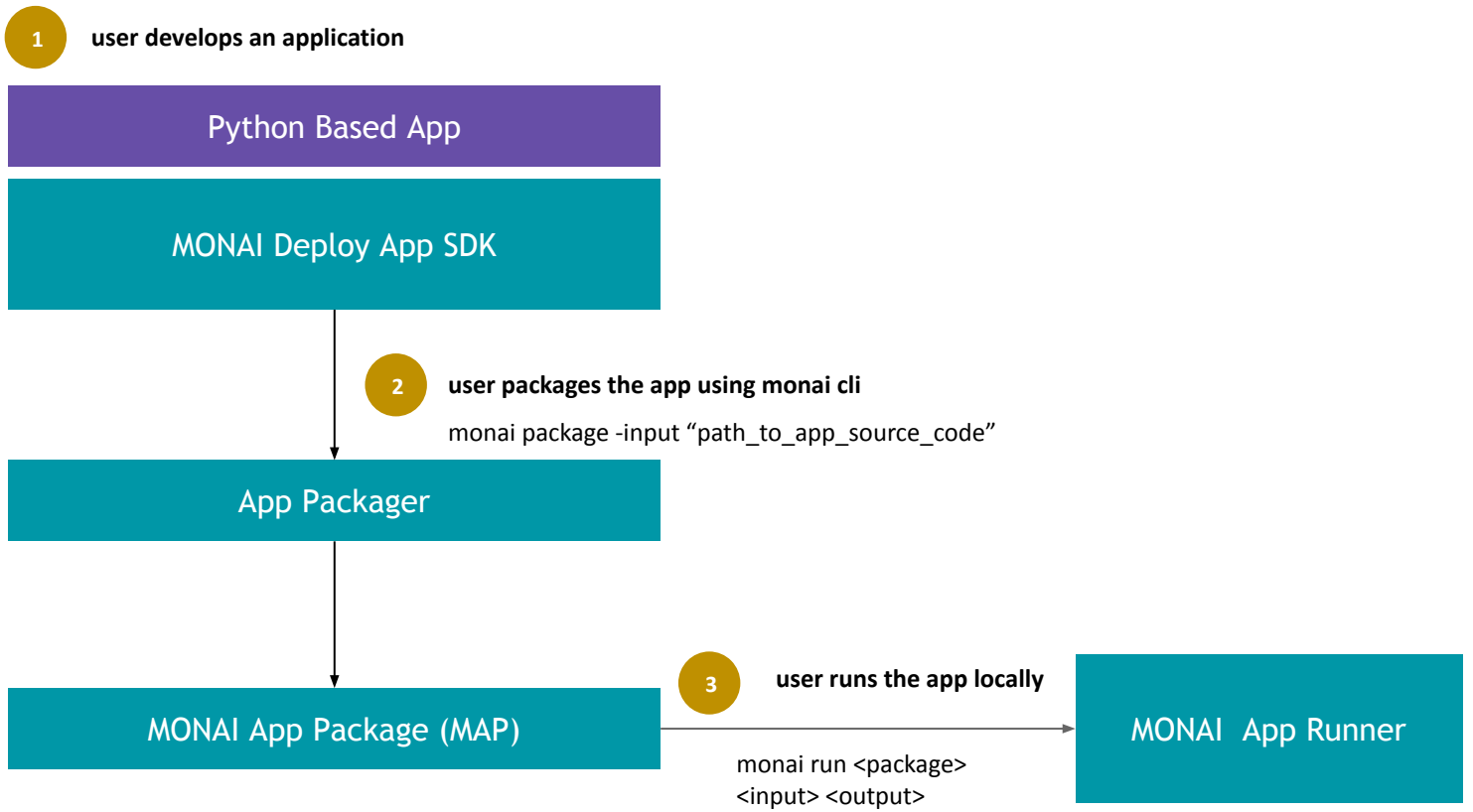
Typical Application in Medical Imaging AI



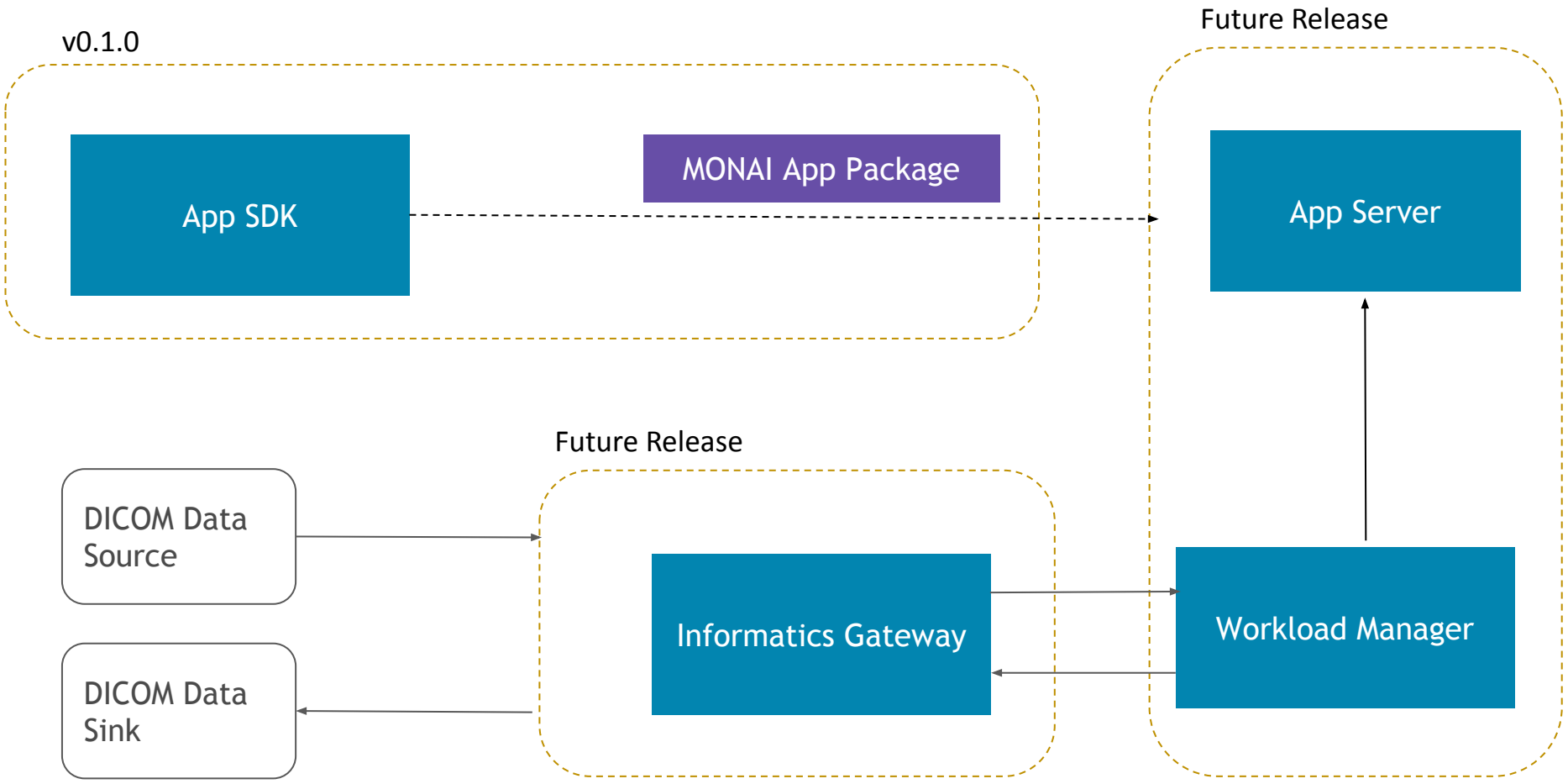
Core Concepts



Development Workflow



MONAI Deploy - What's Next



MONAI Deploy App SDK: Summary

WHO - Data Scientists, Machine Learning Engineers, App Developers in Healthcare Domain

WHY - There is a significant chasm between a trained model & deploy ready app in healthcare

WHAT - Build production ready AI apps in the Healthcare Domain

HOW - Use a Pythonic SDK to design, verify and package AI application

Try it out

pip install monai-deploy-app-sdk

git clone https://github.com/Project-MONAI/monai-deploy-app-sdk.git

open issues in github project

join the working group & contribute

ask questions on https://discord.com/invite/4W9QtCU9

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THANK YOU!