

AWS INNOVATE

ONLINE CONFERENCE 2019

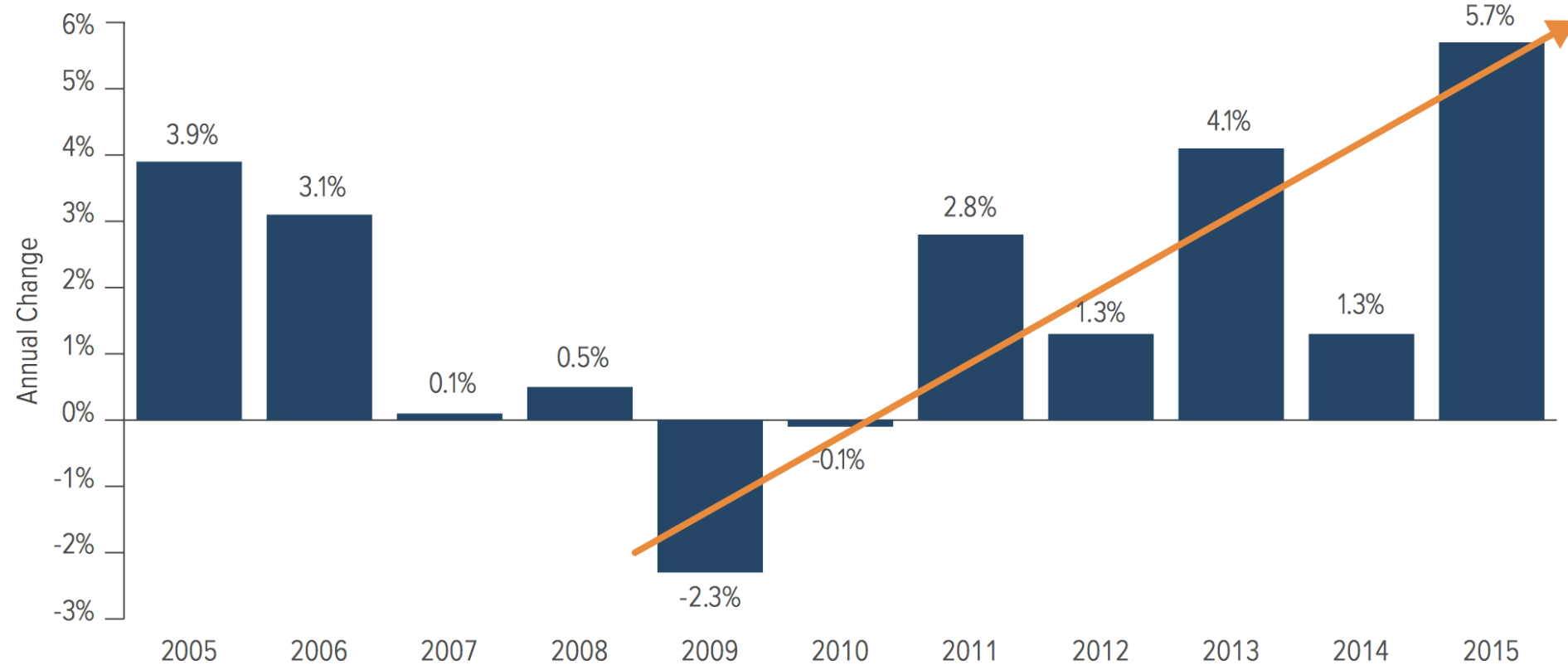
MACHINE LEARNING & AI EDITION

Intelligent Car Damage Assessment

Anand Iyer, Solution Architect, AISPL

Challenges Facing Vehicle Insurers

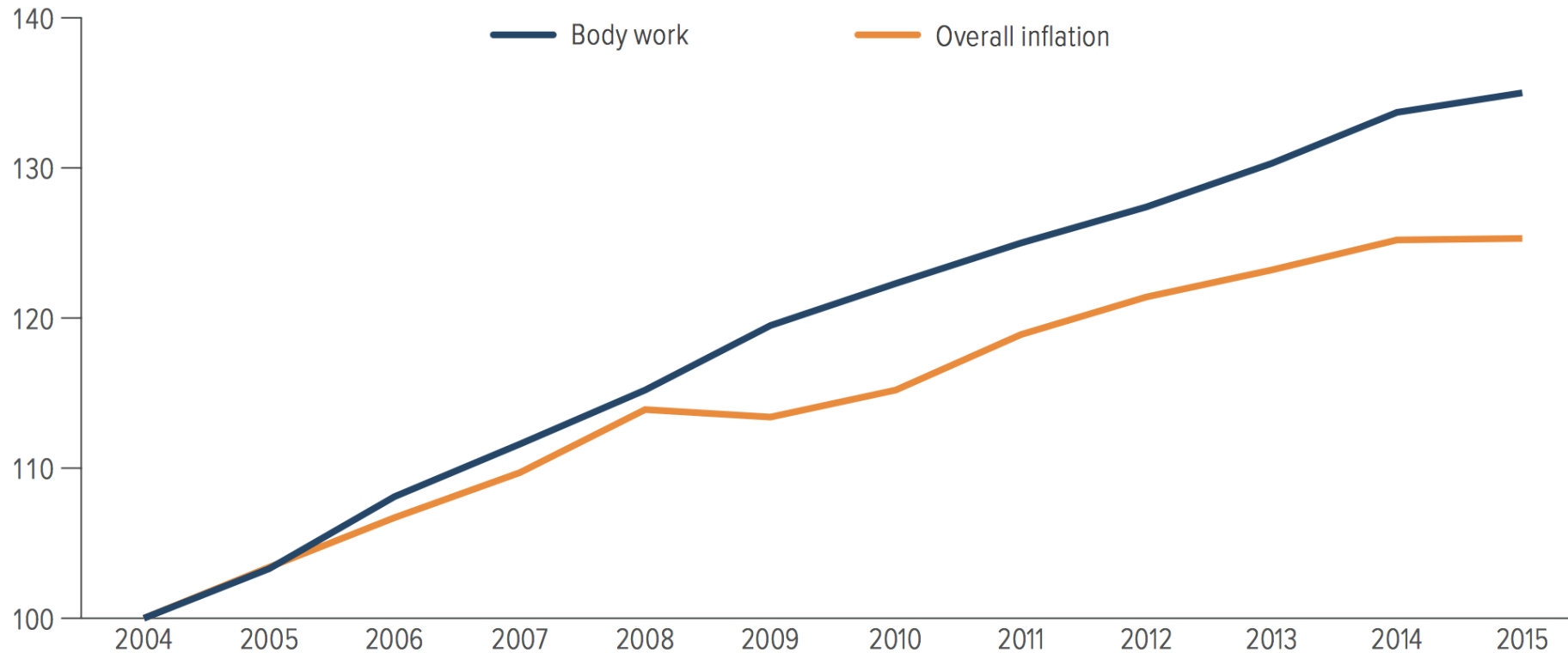
Collision Claims: Severity Trending Higher in 2009–2015



Source: Fast Track Monitoring System, Insurance Information Institute.

Challenges Facing Vehicle Insurers

Cost of Body Work Is Rising Faster Than Costs Overall



(Indexed so 2004 = 100)

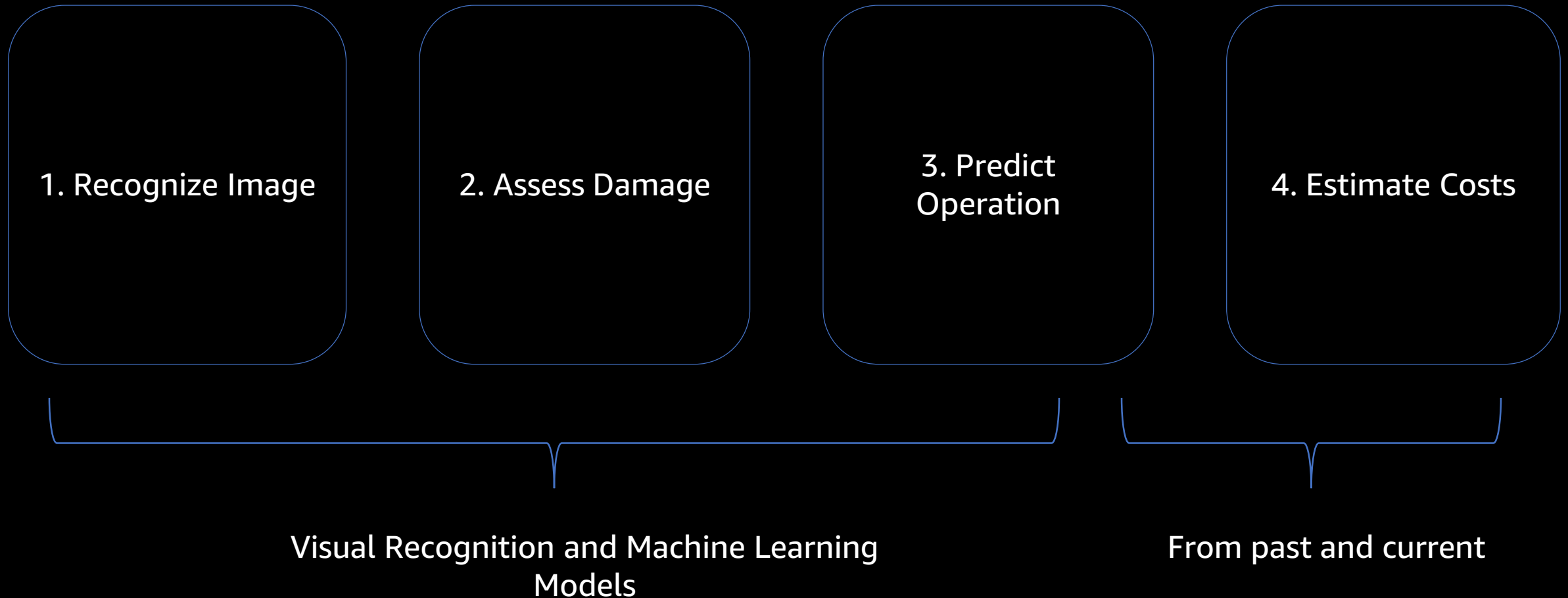
Source: Insurance Information Institute, Bureau of Labor Statistics.



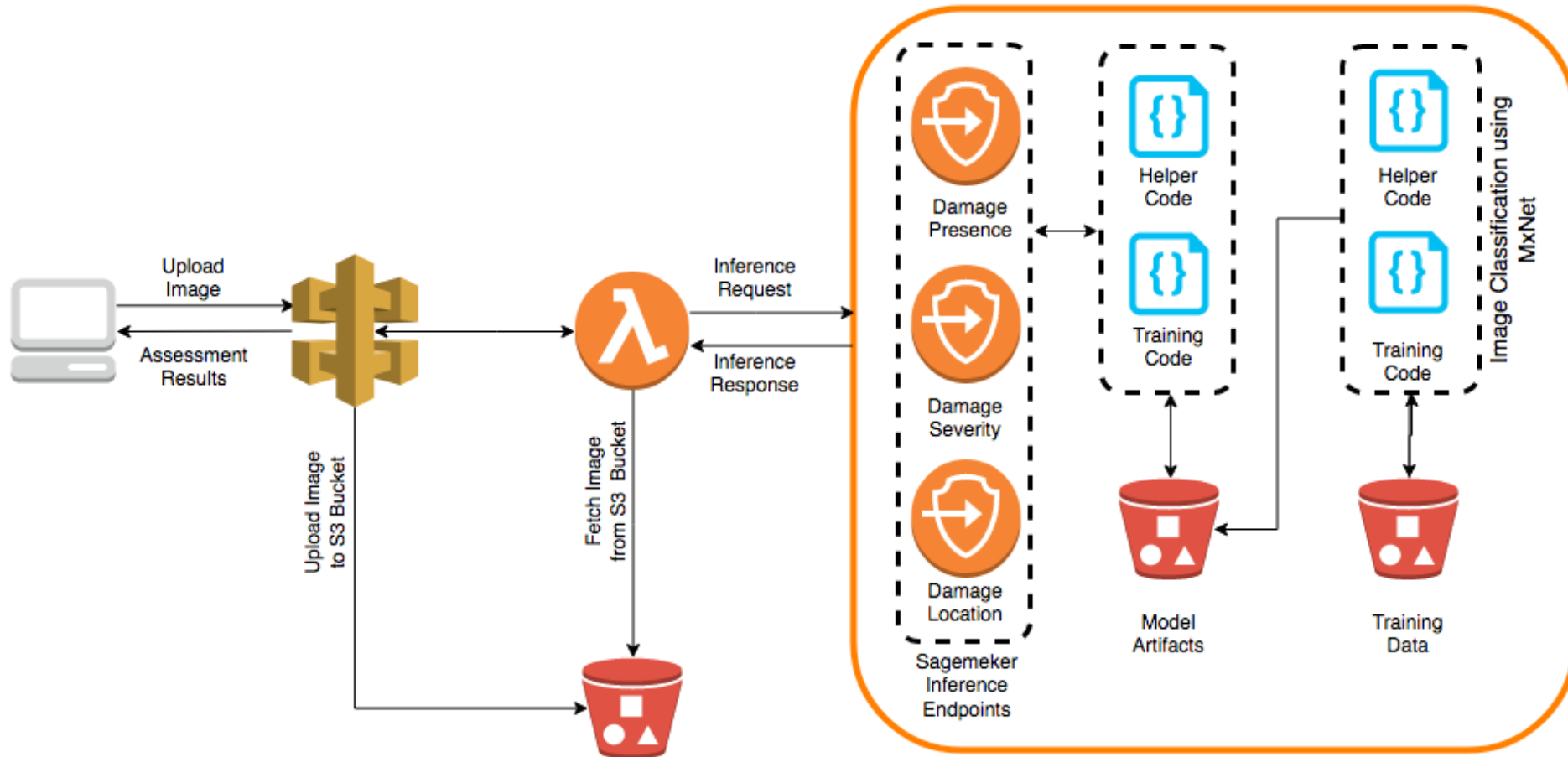
What Problem Are We Trying To Solve?

1. When a vehicle gets damaged in an accident, an insurer has to cover the repair cost
2. However, the estimation for it is done by a body shop, which may overcharge sometimes
3. Furthermore, the estimation process is manual and requires human experts and their time to evaluate the damage

How Do We Solve It?



Serverless API Architecture



Amazon SageMaker: Build, Train, And Deploy ML

Pre-built
notebooks
for common
problems

Choose your
ML algorithm

Built-in, high
performance
algorithms

Optimize your
ML algorithm

One-click
training

Set up and
manage
environments
for training

Optimization

Train and
tune model
(trial and error)

One-click
deployment

Deploy model
in production

Fully
managed with
auto-scaling

Scale and
manage
the production
environment

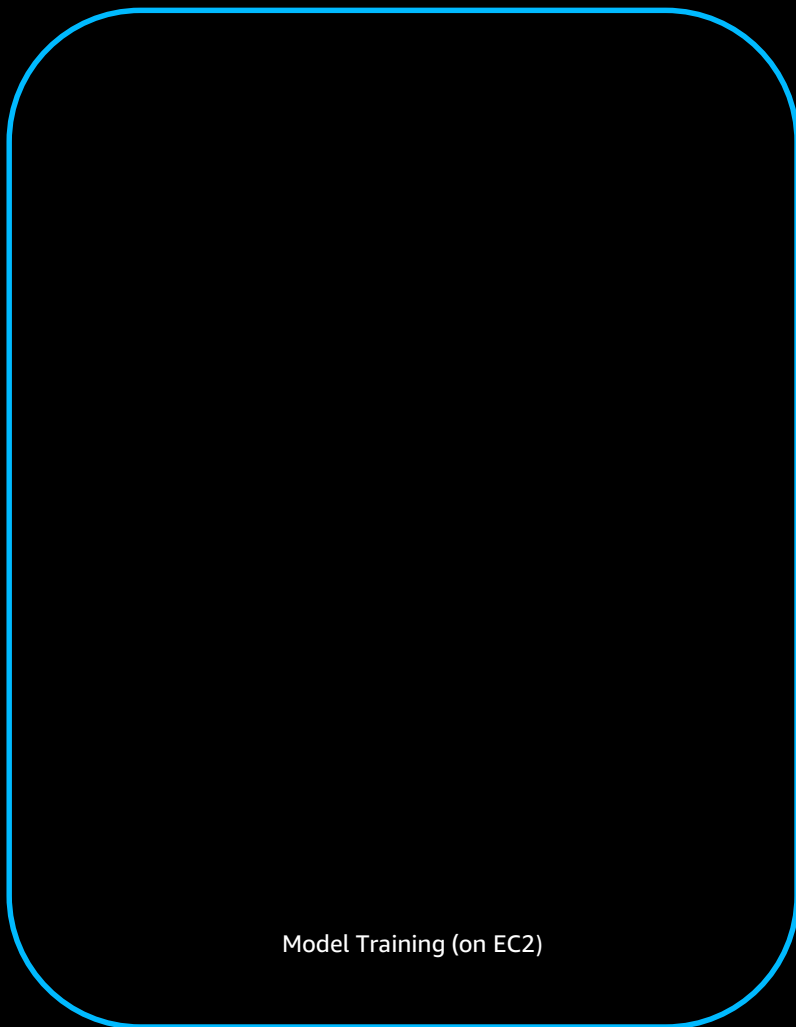
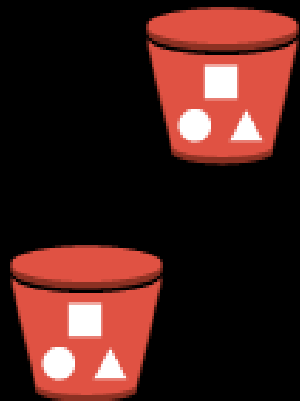
Client application



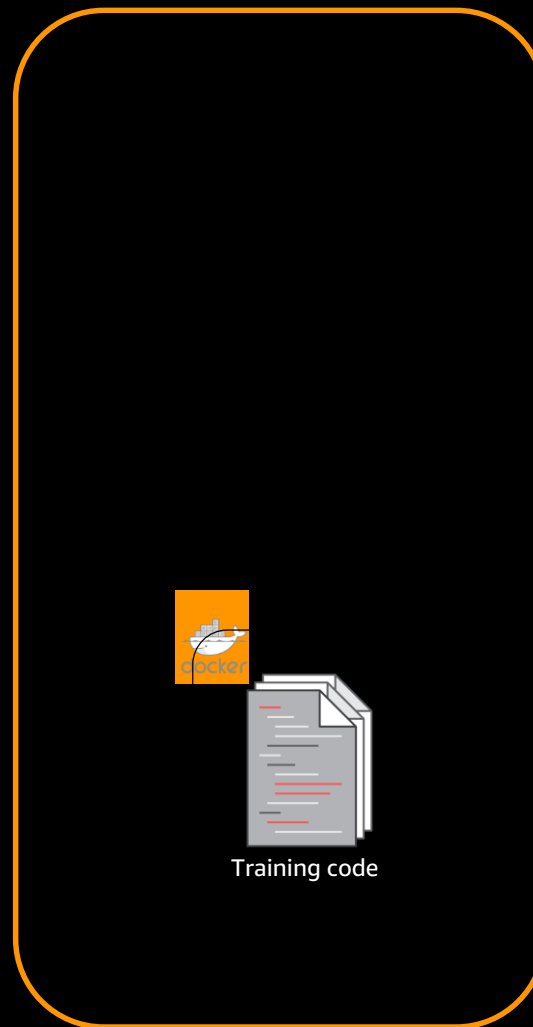
Amazon SageMaker



Amazon ECR



Model Training (on EC2)



Training code

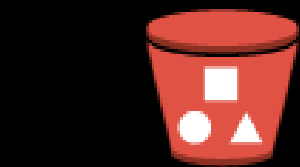
Client application



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Amazon ECR



Training data



Training code



Helper code



Training code

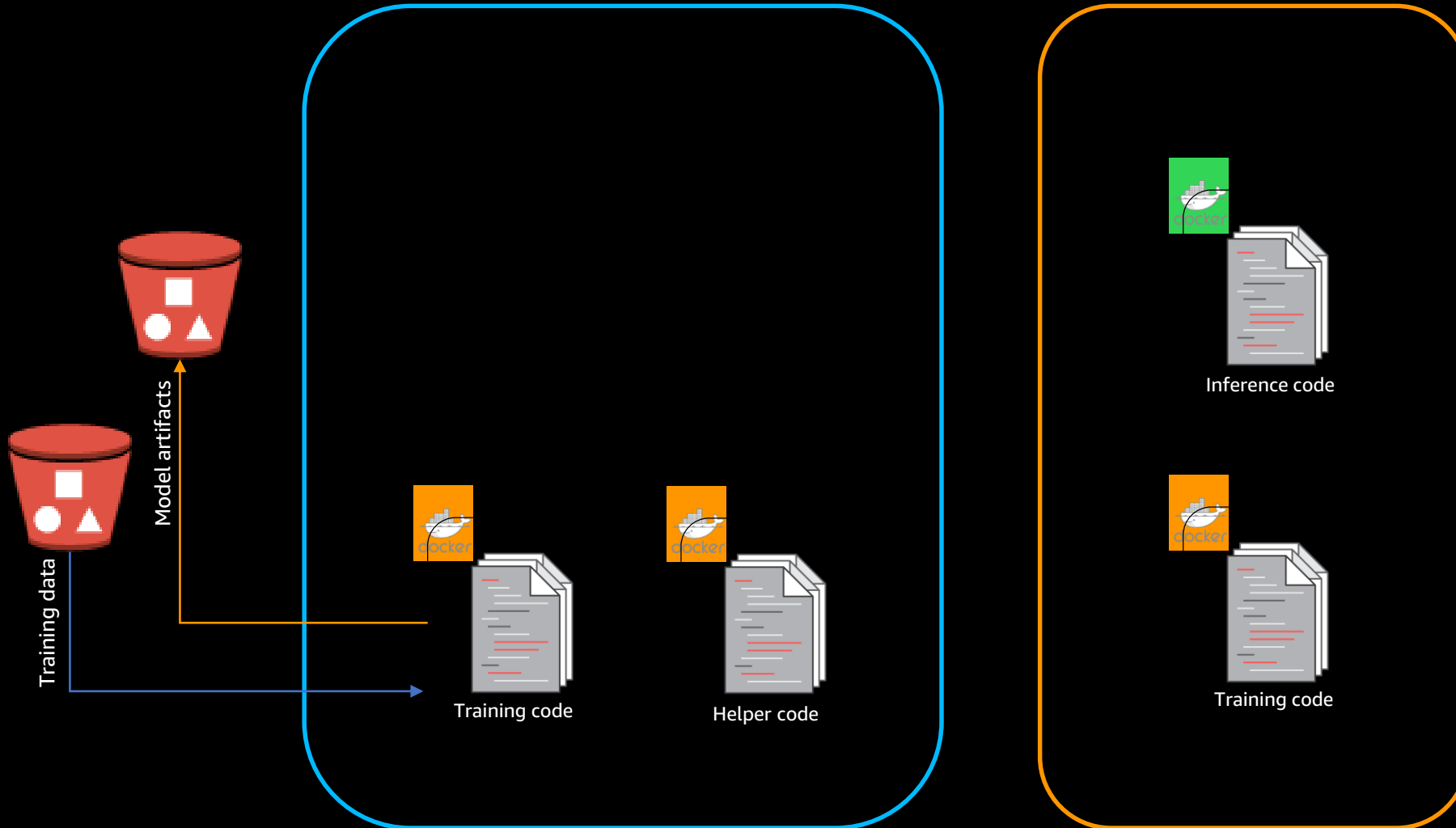
Client application



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Amazon ECR



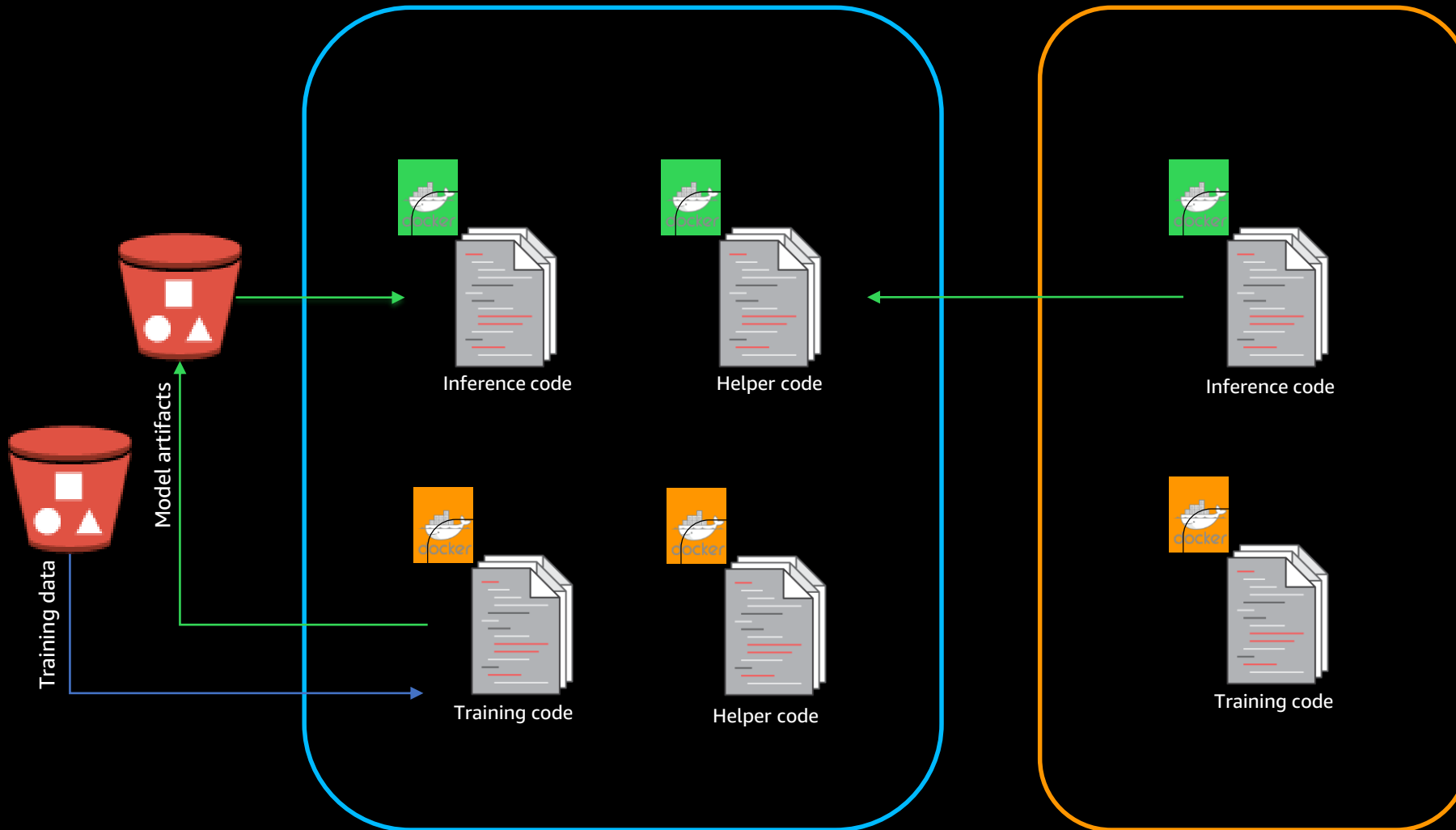
Client application

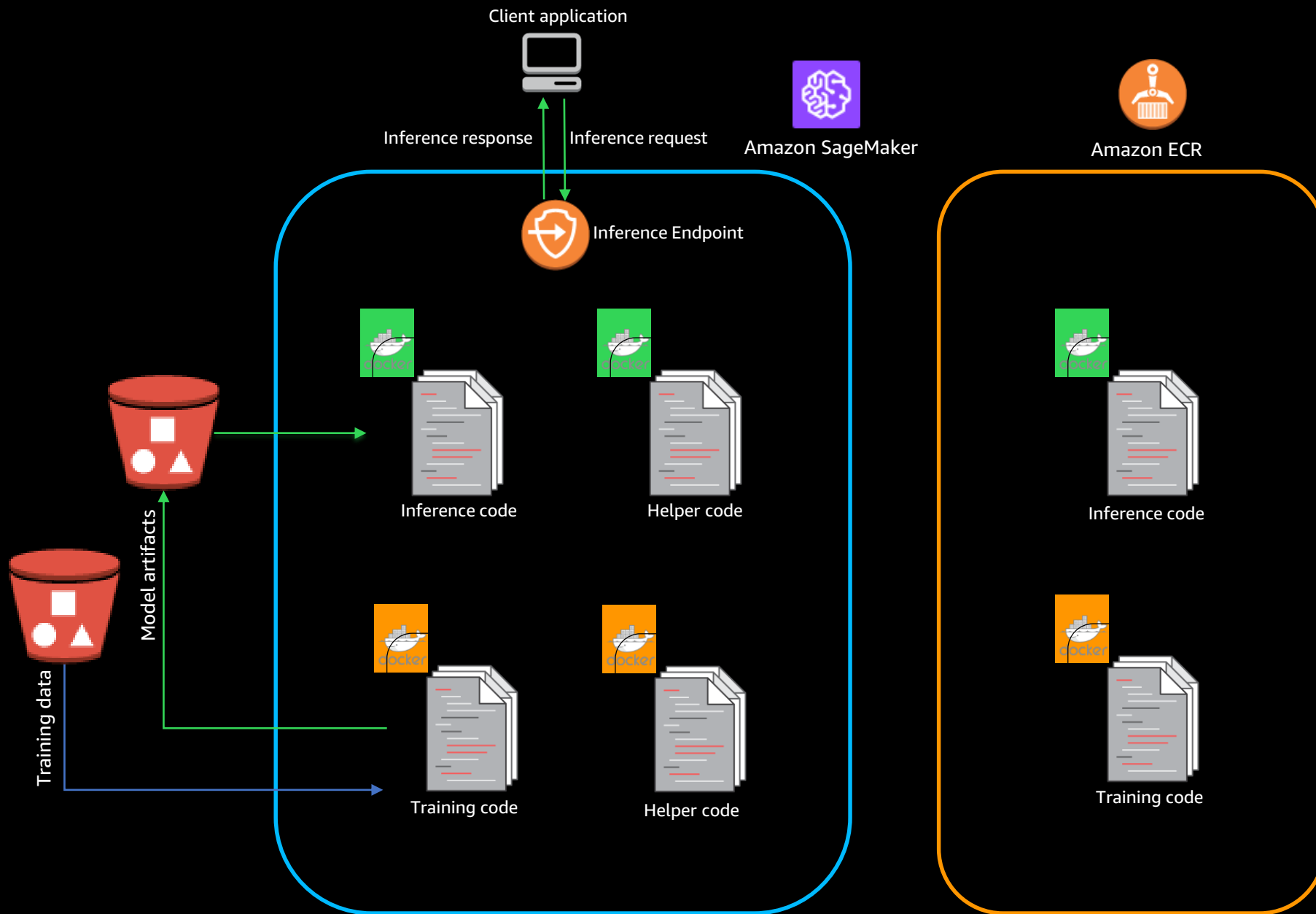


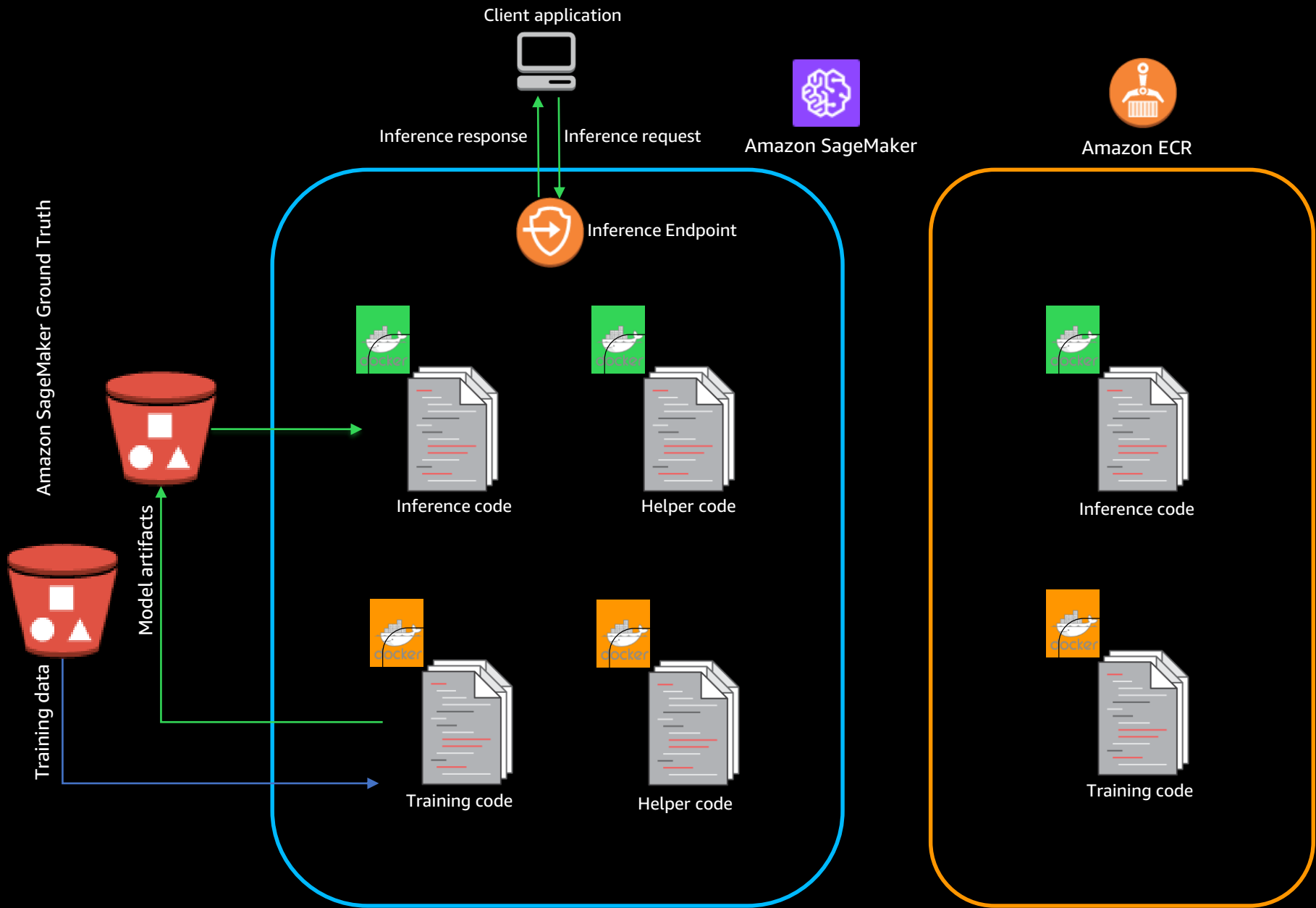
Amazon SageMaker



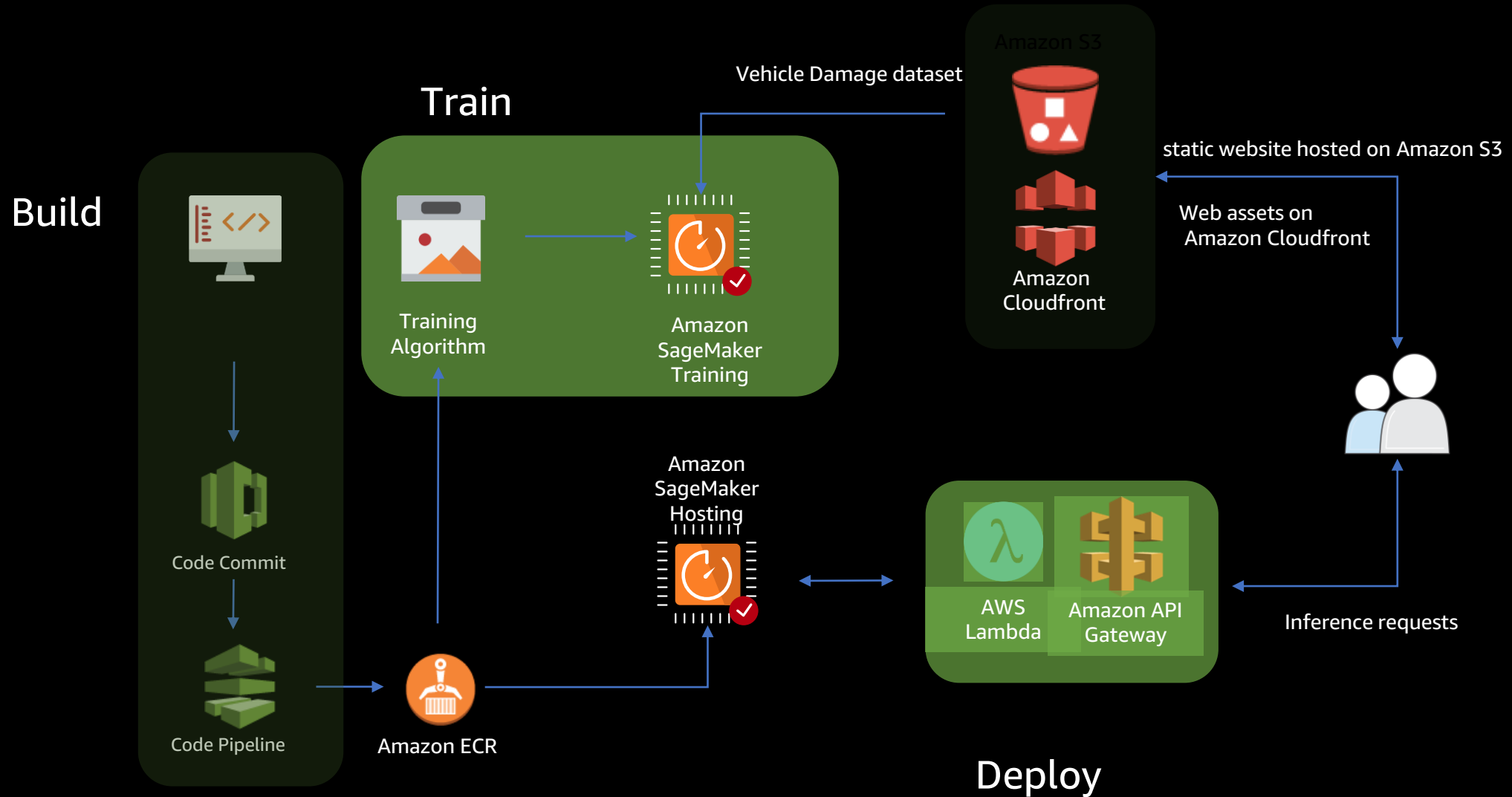
Amazon ECR







Amazon SageMaker Sample End-to-End Architecture: Image Classification



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