AWS re:Invent

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AWS ENERGY

AI-enhanced production optimization solutions in energy

Shaun Baker
Senior Manager, Solutions Architecture
Amazon Web Services

Kyle Jones
Senior Manager, Solutions Architecture
Amazon Web Services

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Agenda

1. Problem: unplanned downtime
2. Solution: edge, insights, edge
3. Hands-on building
4. Q&A
5. Takeaways and next steps

Goals

- ✓ Learn how to get your data from the edge to the cloud with AWS IoT Greengrass
- ✓ Understand the AWS services that allow you to store, catalogue, and share data to derive business insight
- ✓ Build and deploy an ML model to identify anomalies

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All the right tools

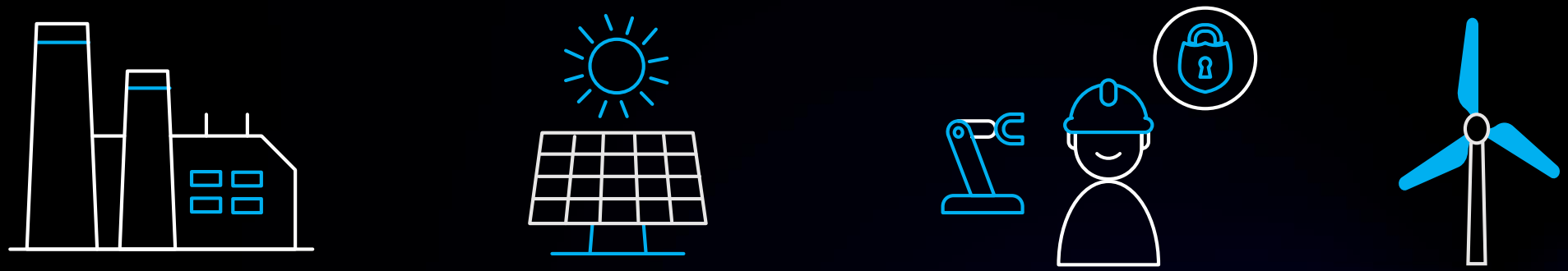


All the right data

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The problem

Unplanned downtime is expensive and disruptive



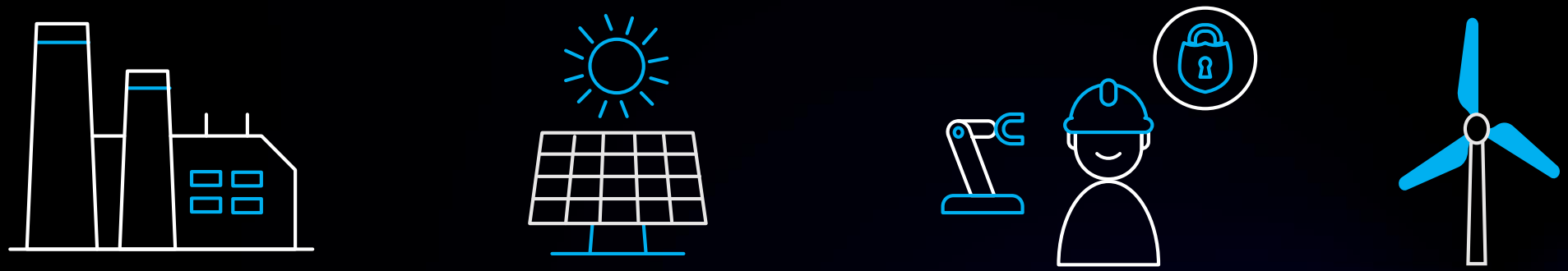
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The problem

Near real-time IoT data is a key lever to reduce unplanned downtime

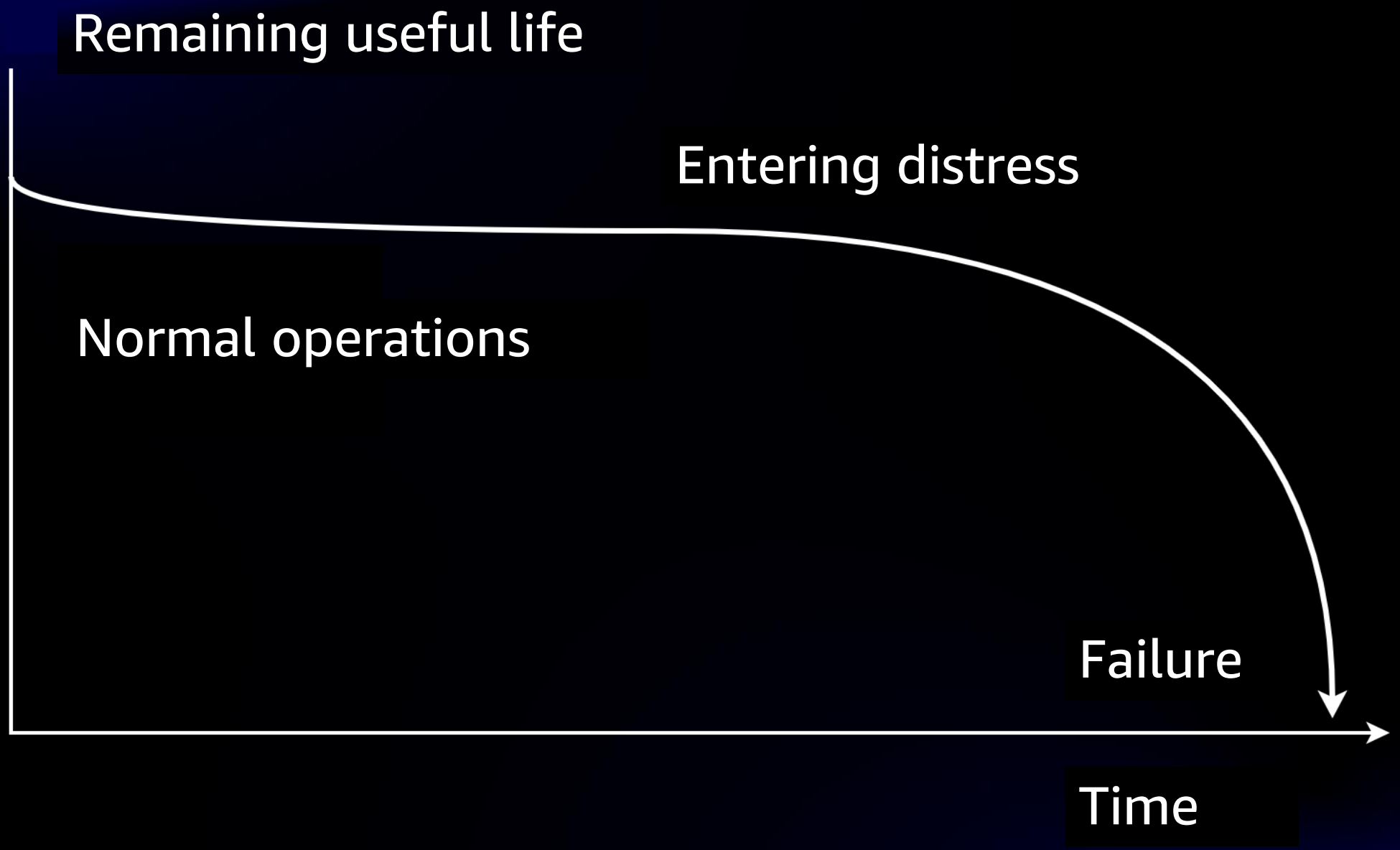
Unplanned downtime of energy assets is expensive and disruptive

Remote site data is often stranded on site



aws

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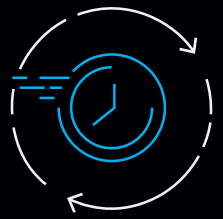


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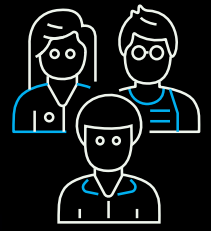
AI-assisted operations



Process control



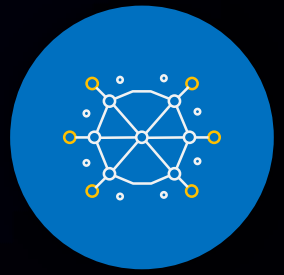
Real-time insights



Data accessible for multiple use cases

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Challenges with managing ML at the edge today



Connectivity is limited



Requires skilled data scientists with domain and analytics expertise



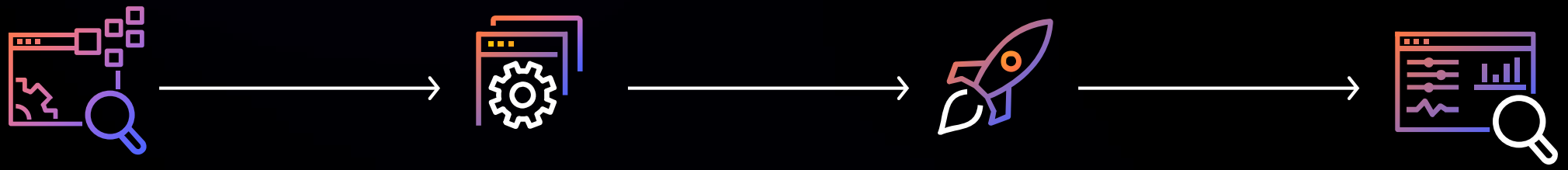
Hard to deploy ML models



False positives erode customer trust

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More than science experiments



Build

Perform bias analysis during exploratory data analysis

Training

Conduct bias and explainability analysis after training

Deploy

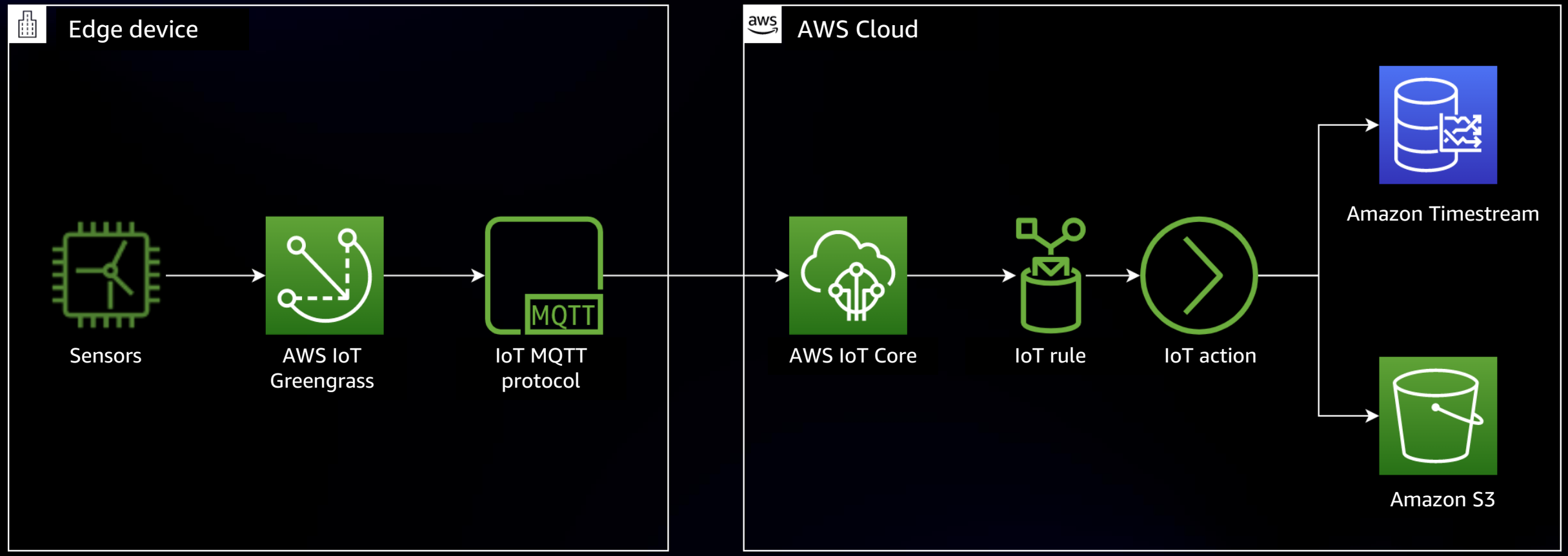
Explain individual inferences for model in production

Monitor

Validate bias and relative feature importance over time

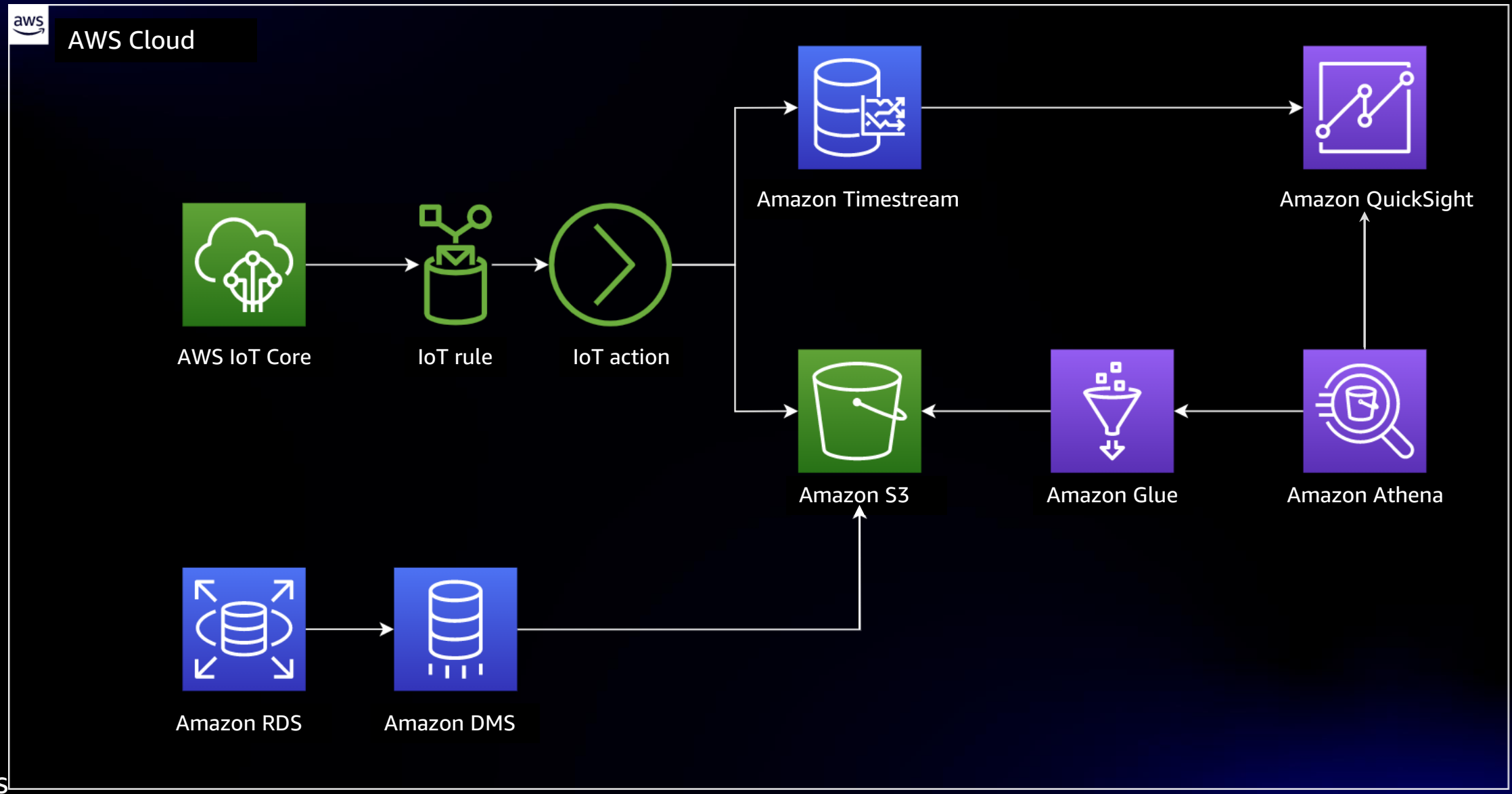
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Collect, connect, transport, and store



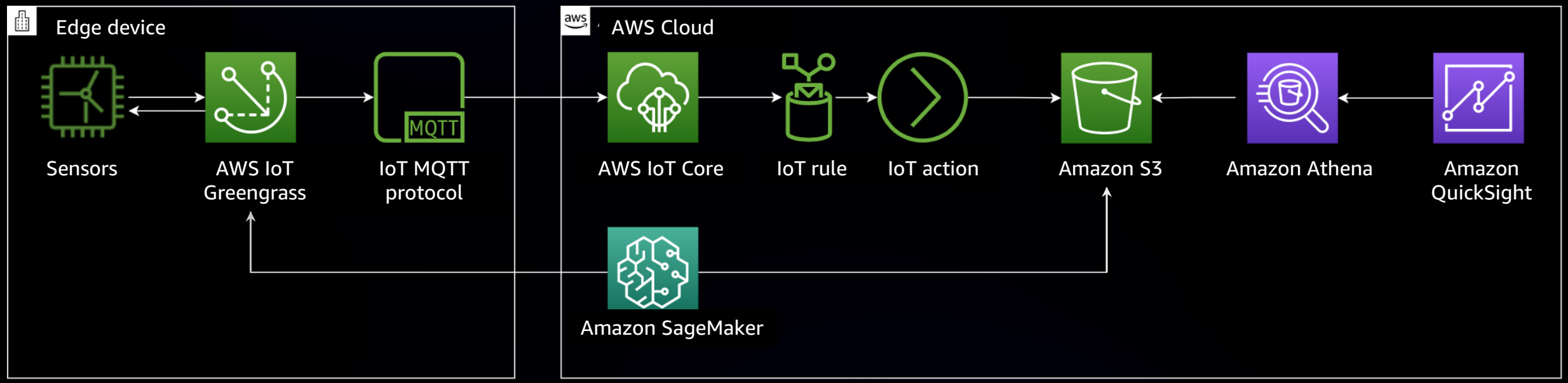
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Orchestrate, store, transform, and visualize



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Collect, store, visualize, detect, and remediate



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Hands-on building

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Thank you!

Shaun Baker
bakshau@amazon.com

Kyle Jones
jnesnky@amazon.com

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