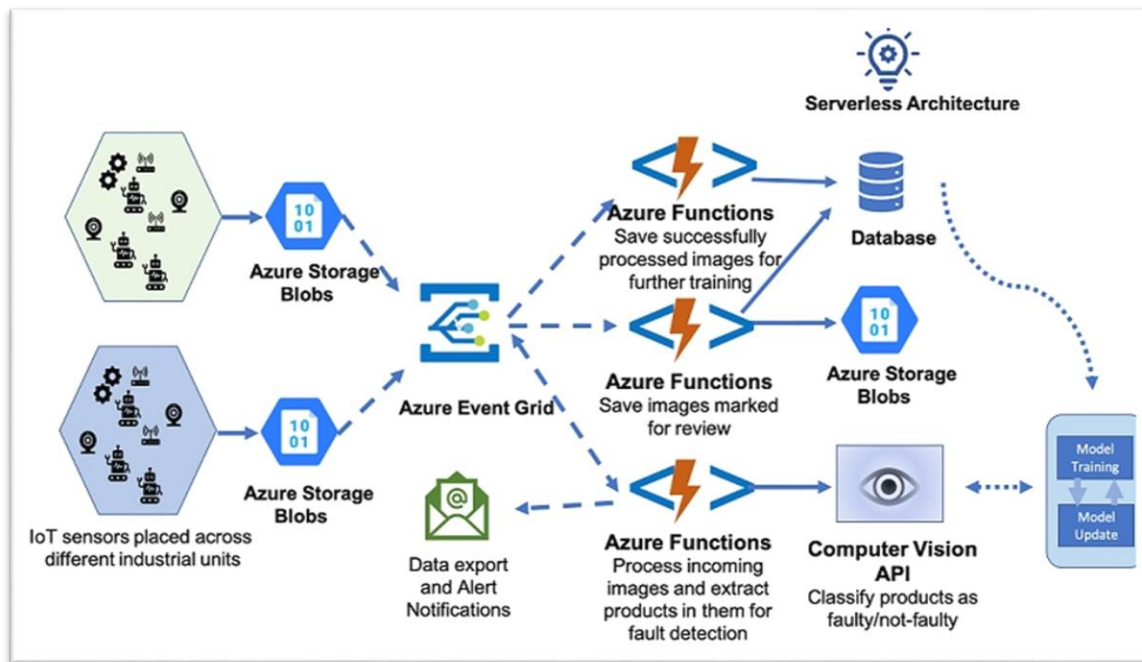


Example Scenario for Azure Functions for IoT:



Considering the scenario shown above, you can implement a solution using **Azure Functions** and **Cognitive APIs**. This solution scales well if needed due to the nature of serverless applications. It's built from pre-existing solutions. Using Azure Functions, you can combine these existing components and rapidly deploy a system based on your business logic. The solution is based on three Azure functions:

- Process incoming images and extract products in them for fault detection
- Save successfully processed images for further training
- Save images marked for review

The solution uses:

- Azure Event Grid
- Azure Storage Blob
- Azure Cognitive Services (Computer Vision API)
- Cosmos DB database
- Cameras

Azure Event Grid orchestrates the solution. It receives images from cameras in the production line. The function "Process incoming images and extract products in them for fault detection" uses Azure Cognitive APIs to check if the images have faults. If a

fault is detected, then a notification is sent by email. Some images are sent for review by the "Save images marked for review" function. Finally, the images successfully processed are saved by the "Save successfully processed images for further training".

The Triggers and Bindings used are listed below

Azure Functions	Triggers	Input Binding	Output Binding
Save successfully processed images for further training	Event Grid: Event Grid is used to read an image from another Azure function marked as faulty or non-faulty with high confidence. Image is stored in queue for use in future training	Message queue	Cosmos DB
Save images marked for review	Event Grid: Event Grid is used to read an image from another Azure function marked as faulty or non-faulty with low confidence. Image is stored in queue for manual review	Message Queue	Blob storage
Process incoming images and extract products in them for fault detection	Event Grid: Event Grid is used to read an image from Blob Storage	Blob storage	Computer Vision API and SendGrid (email)