Azure Deployment Platform Comparison for Python + Azure Custom Vision

Deployment Options Overview

Feature	Azure App Service	Azure Functions	Azure Virtual Machines (VMs)
Use Case	Web Applications and APIs	Small tasks and apps	Gives full control over the system
Performance	Fast for Websites	Fast for small apps but slow with bigger apps	Depends on server size
Works with Custom Vision	Yes	Yes	Yes
Maintenance	Managed by Azure	Managed by Azure	Managed by Azure
Security	Managed by Azure	Managed by Azure	Must be individually setup
Cost	Based on usage	Pay for each run	Pay for the server

Pros & Cons Comparison

Platform	Pros	Cons
Azure App Service	● Easy to set up and manage ● Grows automatically with traffic ● Good for websites that use Azure Custom Vision	● Costs more if there's low traffic ● Not ideal for long-running background tasks
Azure Functions	● Only pay when the app runs	● Slower for larger jobs or complex

	● Great for tasks that happen once in a while ● Good for automatic image checks with Custom Vision	tasks ● Harder to test and debug
Azure Virtual Machines	● Full control over the system and software ● Best for running heavy tasks or large Custom Vision jobs	● Harder to manage (manual updates, security, etc.) ● Costs more if the server runs all the time

Cost Estimation

Disclaimer - Student Plan gives $100 in Azure Credits and gives free access to Azure app services

Platform	Estimated Cost
Azure App Service	$15/Per Month (small sizes free)
Azure Functions	$0.20 Per Million Runs
Azure Virtual Machines	$7-200/Month Depending On Size

Recommended Deployment Approach

Recommendation: Azure App Service

- Best for websites or web apps that connect to Azure Custom Vision
- Easy to manage and scales automatically
- Can be cheap

Changed to Render due to Azure App Service needing increased parallelism (which can take up to 4-5 business days to receive).