Microsoft

Azure Cognitive Services Personalizer

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Azure Cognitive Services

Powerful prebuilt AI models exposed as API services

Process images, video, speech, language and more

Simple REST APIs with .NET, Java, Python, Node SDKs

Vision

Speech

Language

Conversation

Bing Search

Knowledge

Azure Cognitive Services

Personalizer

Create rich, personalized experiences for every user of your app. Prioritize relevant content and user experiences, improving app satisfaction, usability, and engagement, with Azure Cognitive Services Personalizer Preview

What is azure personalizer?

Azure Personalizer is a cloud-based API service that allows you to choose the best ***experience*** to show to your users, learning from their real-time behavior.

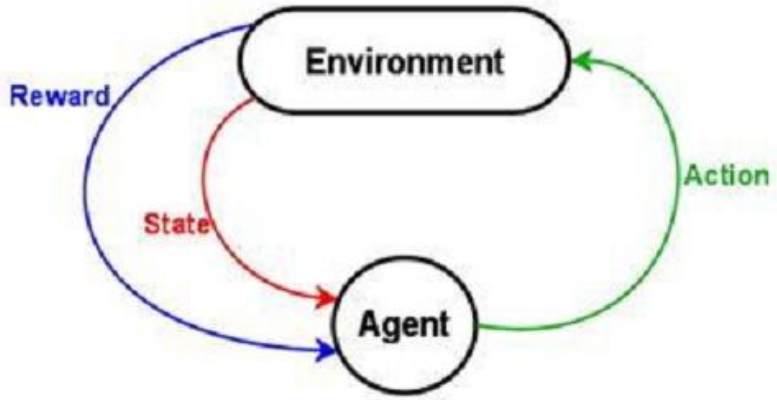
- Personalize what article is highlighted on a news website.
- Optimize ad placement on a website.
- Display a personalized "recommended item" on a shopping website.
- Suggest user interface elements such as filters to apply to a specific photo.
- Choose a chat bot's response to clarify user intent or suggest an action.
- Prioritize suggestions of what a user should do as the next step in a business process.

How?

- Personalizer uses machine learning models to discover what action to rank highest in a context.
- Your application provide possible actions, with information about them; and information about the context.
- Personalizer determines the action to take.
- Application uses the chosen action, then provides feedback to Personalizer in the form of a reward score.
- After the feedback is received, Personalizer automatically ***updates its own model*** used for future ranks

Reinforcement Learning

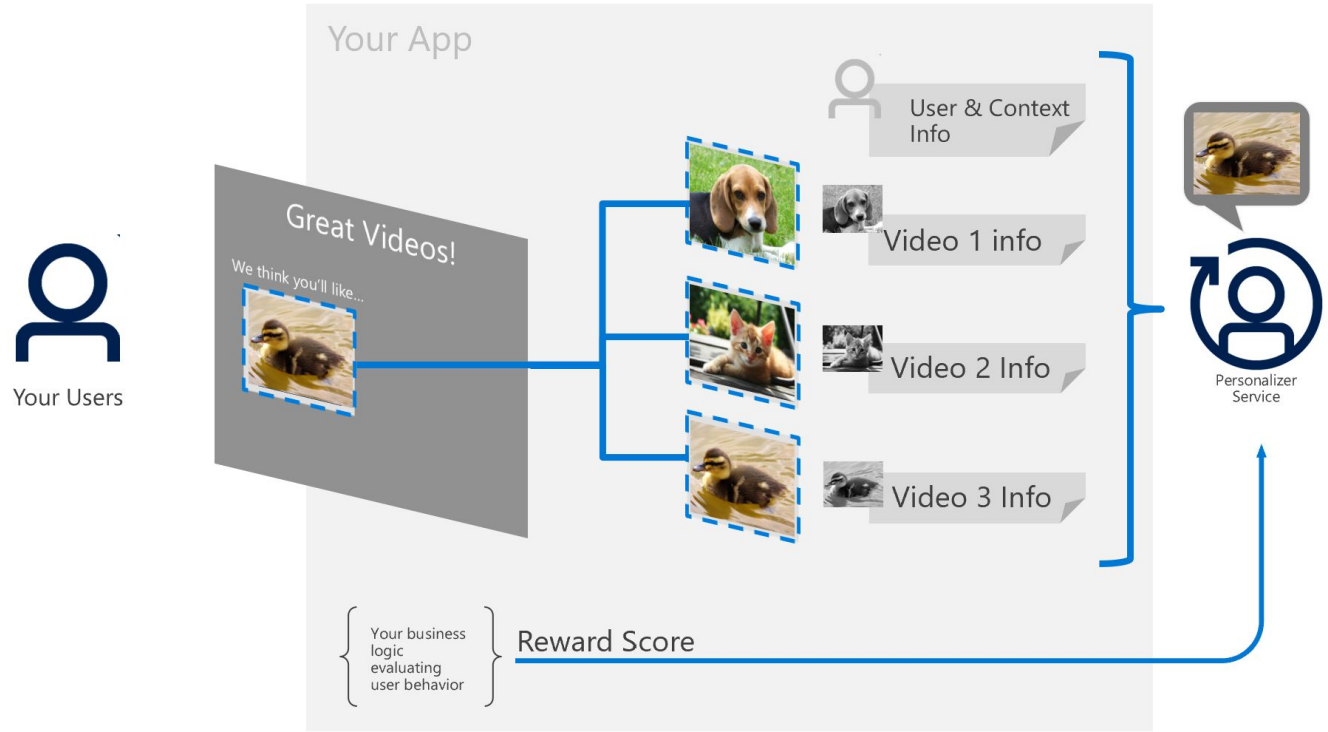
Reinforcement Learning is an approach to machine learning that learns behaviors by getting feedback from its use.

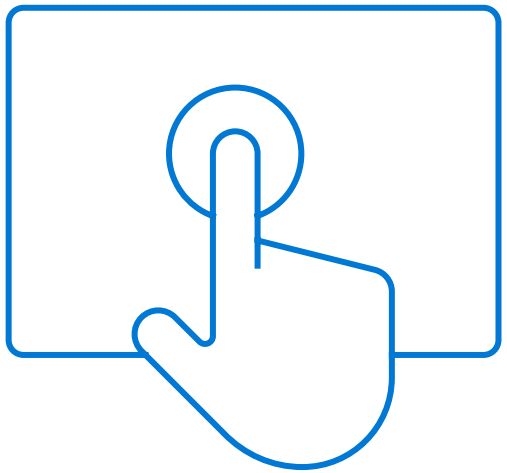


Reinforcement learning is an area of machine learning concerned with how software agents ought to take actions in an environment so as to maximize some notion of cumulative reward. Reinforcement learning is one of three basic machine learning paradigms, alongside supervised learning and unsupervised learning.(wikipedia)

How to use azure personalizer

1. Choose an experience in your app to personalize.
2. Create and configure an instance of the Personalization Service in the Azure portal. Each instance is a Personalizer Loop.
3. Use SDK to call Personalizer with information (*features*) about your users, and the content (*actions*). You don't need to provide clean, labeled data before using Personalizer.
4. In the client application, show the user the action selected by Personalizer.
5. Use SDK to provide feedback to Personalizer indicating if the user selected Personalizer's action. This is a *reward score*, typically between -1 and 1.
6. View analytics in the Azure portal to evaluate how the system is working and how your data is helping personalization.





Demo

Setup Personalizer on Azure Portal

Personalizer Guidelines for responsible Implementations

Using a service that learns to personalize content and user interfaces is useful. It can also be misapplied if the way the personalization creates negative side effects in the real world, including if users are unaware of content personalization.

Personalizing content depends on having useful information about the content and the user. Keep in mind, for some applications and industries, some user features can be directly or indirectly considered discriminatory and potentially illegal.
Consider the effect of these features:
User demographics: Features regarding sex, gender, age, race, religion: These features may be not allowed in certain applications for regulatory reasons, and it may not be ethical to personalize around them because the personalization would propagate generalizations and bias. An example of this bias propagation is a job posting for engineering not being shown to elderly or gender-based audiences.
Locale information: In many places of the world, location information (such as a zip code, postal code, or neighborhood name) can be highly correlated with income, race and religion.