Ri Off the Shelf Masterclass: Artificial Intelligence

Solutions - Worksheet 1 – Training an AI

Ash runs a fun fair and has built an AI prize bot that will give each of the game winners an animal stuffed toy. Ash has trained the bot themselves, and tried to make it fair, so that it gives anyone who wins a prize after they give the bot their age, favourite animal, and favourite colour. But there’s a problem, during initial tests the AI prize bot seems to be unfair! Some people are given a prize by the bot, while others never receive a prize.

**Can you figure out why the bot does not give a prize in each of the tests?**

*Hint: For each test, try to spot the pattern in who does not win a prize.*

**Test 1: Whack-a-Mole Winners**

In Ash’s first test on the whack-a-mole game, they notice that the bot is not giving prizes to everyone. They need to figure out why this is happening, so they can fix it!

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| --- | --- | --- | --- | --- |
| **Name** | **Age** | **Favourite Colour** | **Favourite Animal** | **Prize Given?** |
| Sarah | 10 | Blue | Giraffe | Yes |
| Alex | 10 | Orange | Rabbit | **No** |
| Mia | 11 | Green | Cat | Yes |
| Jake | 10 | Red | Cat | Yes |
| Priya | 11 | Orange | Dog | **No** |
| Oliver | 11 | Blue | Horse | Yes |
| Charlie | 10 | Orange | Dolphin | **No** |

1. What do all the people who do not win a prize have in common?

*They all chose Orange as their favourite colour*

1. What can Ash do to improve the bot and make sure everyone is given a prize?

*Ash could include as many colours as possible when training the AI bot*

**Test 2: Hook a Duck Winners**

Ash has fixed the issue from the previous test, and moved onto the hook a duck game, but there are still people who do not get given a prize!

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Age** | **Favourite Colour** | **Favourite Animal** | **Prize Given?** |
| Ria | 9 | Pink | Lion | **No** |
| James | 8 | Orange | Rabbit | **No** |
| Lara | 10 | Pink | Cat | Yes |
| Nick | 10 | Blue | Lion | Yes |
| Hajat | 9 | Green | Dog | **No** |
| Ali | 8 | Blue | Horse | **No** |
| Sophia | 11 | Orange | Dolphin | Yes |

1. What do all the people who do not win a prize have in common?

*They are all younger than 10*

1. What can Ash do to improve the bot and make sure everyone is given a prize?

*Ash could make sure all ages are inputted when training the AI bot.*

**Test 3: Fun Fair Winners**

Ash has fixed the issue from the previous test, and now thinks the bot is ready to give prizes for the whole fun fair, but there is now a new problem!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Game Played** | **Age** | **Favourite Colour** | **Favourite Animal** | **Prize Given?** |
| Niamh | Whack-a-Mole | 12 | Pink | Donkey | Yes |
| Luke | Hook a Duck | 9 | Blue | Monkey | Yes |
| Priti | Ring Toss | 11 | Yellow | Cat | **No** |
| Dom | Coconut Shy | 10 | Red | Lion | **No** |
| Cleo | Whack-a-Mole | 8 | Pink | Dog | Yes |
| Hannah | Ring Toss | 11 | Green | Seal | **No** |
| Aran | Hook a Duck | 10 | Red | Panda | Yes |

1. What might have caused the bot to not give prizes to some of the players?

*They are playing new games – Ring Toss and Coconut Shy. If Ash did not test the bot on these, they bot may not know to give them a prize.*

1. What can Ash do to improve the bot and make sure everyone is given a prize?

*Ash could make sure that the AI bot is tested on all the games.*