
Algorithm 1 Tool execution policy P

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1: Input: Formatted intent dictionary  $D_{int}$ 
2: Output: Results dictionary  $D_{aug}$ 
3: Initialize:  $D_{aug} \leftarrow \{\}$ 
4: for game in  $D_{int}$ [liked games] do
5:    $D_{aug} \leftarrow D_{aug} \cup \text{lookup}(\text{game})$  ▷ Lookup
6:    $D_{aug} \leftarrow D_{aug} \cup \text{similar}(\text{game})$  ▷ Similar
7:  $D_{aug} \leftarrow D_{aug} \cup \text{search}(D_{int}[\text{liked genres}])$  ▷ Search
8: if  $D_{aug} = \{\}$  then
9:    $D_{aug} \leftarrow D_{aug} \cup \text{search}(D_{int}[\text{liked properties}])$  ▷ Search
10: for game in  $D_{int}$ [disliked games] do
11:    $D_{aug} \leftarrow D_{aug} \cup \text{lookup}(\text{game})$  ▷ Lookup
12:  $D_{aug} \leftarrow D_{aug} \cup \text{games\_by\_age}(D_{int}[\text{user age groups}])$  ▷ Age
13: if  $D_{aug} = \{\}$  then
14:    $D_{aug} \leftarrow \text{default\_games}(30)$  ▷  $D_{aug}$  could be still empty if the user's request is too generic; randomly sample 30 games from top-100 games.
15: for game in  $D_{aug}$ [similar, search, age results] do ▷ Filter
16:   if  $\text{genre}(\text{game})$  in  $D_{int}$ [disliked genres] then
17:      $D_{aug} \leftarrow D_{aug} \setminus \text{game}$ 
18:   if  $\text{incompatible}(\text{game}, D_{int}[\text{preferred devices}])$  then
19:      $D_{aug} \leftarrow D_{aug} \setminus \text{game}$ 
20:  $D_{aug} \leftarrow \text{format}(D_{aug})$  ▷ Format
21: return  $D_{aug}$ 
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