Explainable Similarity Detector

Das AMOS Projekt - WS 2021/2022

Explainable Similarity Detector

User Documentation
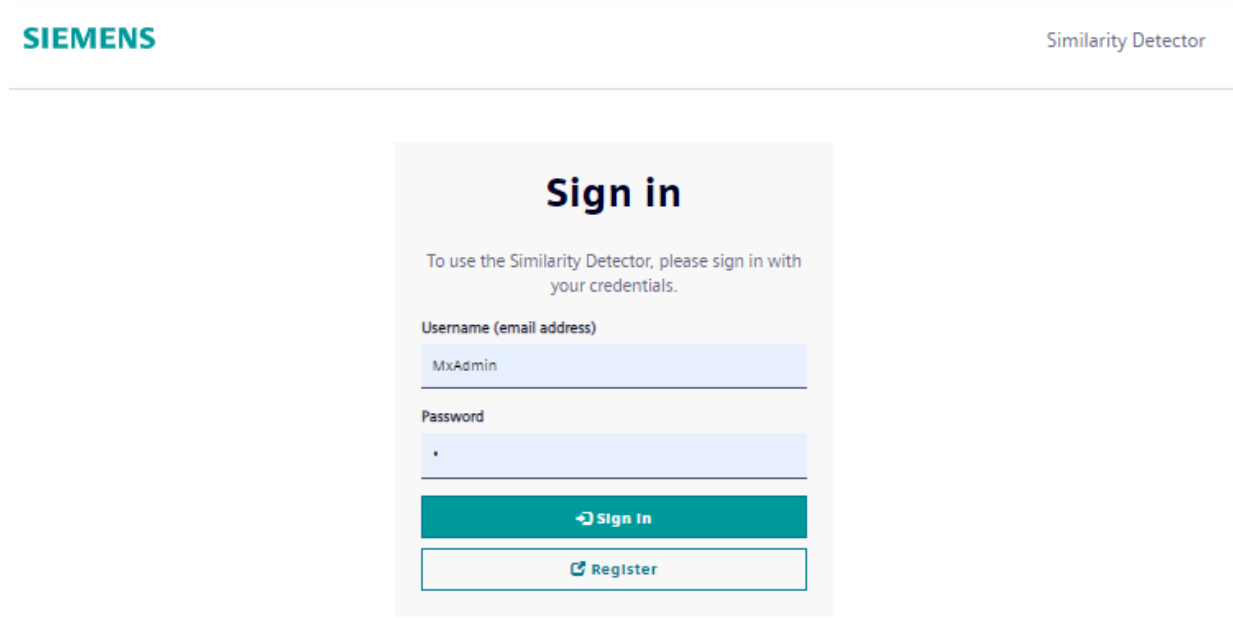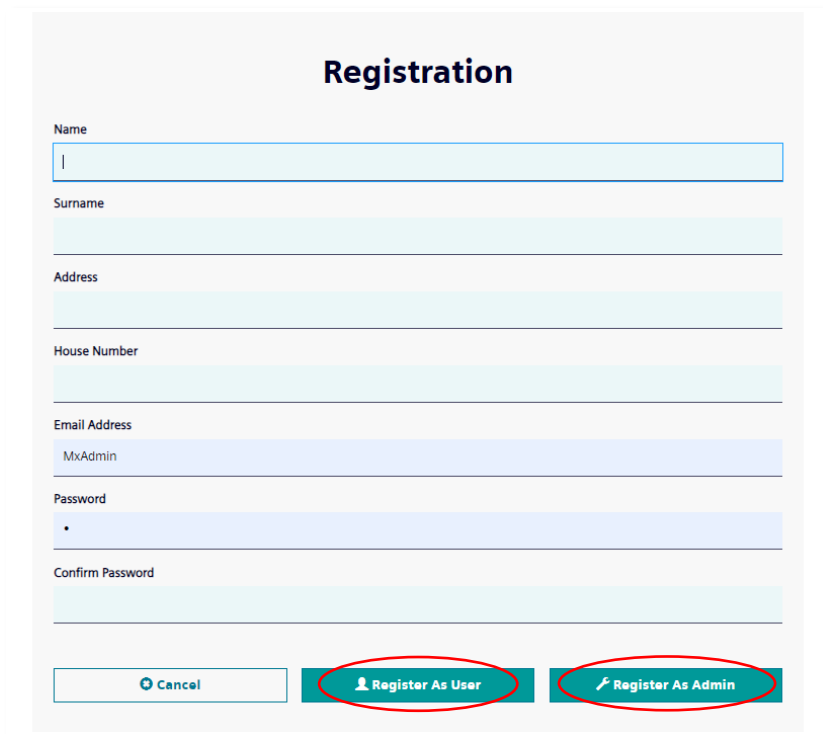
Project Team 06

Content

1. Sign In and User Account Creation

As the user clicks to get to the Exlainable Similarity Tool he/she will first get asked to sign-in with his or her user credentials. If the user is new to the tool, the user needs to click on the **Register** Button.

On the **Registration** page the user is then asked to put in his/her credentials. The E-mail address will further be used as the username. The user is than asked to create a password and confirm it as well. After the new user has filled in all of his/her credentials, he/she than has to decide whether the/she wants to continue as a "regular" user or and administrator. Only the admin will have the full access to all pages and functionalities of the tool as it will be described further and the "regular" user will have a limited view.

2. Similarity Search - Landing Page

After a successful log in , the user will land on the **Similarity Search** landing page**.** If the user signed-in as an administrator he/she will also see the tab for **Added Components** at the very top, as well as the **Sign Out** tab. If the user has a "regular" account he/she will only see the **Sign Out** tab next to the **Similarity Search** tab.

In the lower part, the user might see the results of the previous search presented in a table format.

Search Results

Properties							⌄
Component ID	Similarity Type	Difference In					
16	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
17	A/Upgrade	Product Height		ⓘ	⎙	✎	
18	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
19	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
40	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
41	A/Upgrade	Product Height		ⓘ	⎙	✎	
42	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
43	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
64	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
65	A/Upgrade	Product Height		ⓘ	⎙	✎	
66	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
67	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
88	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
89	A/Upgrade	Product Height		ⓘ	⎙	✎	
90	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
91	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
112	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	
113	A/Upgrade	Product Height		ⓘ	⎙	✎	
114	A/Upgrade	Product Height, Temp		ⓘ	⎙	✎	

3. Similarity Search - Filter Creation

On top in the very first part, the user can use the text fields to search for the specific components. Just with a partly description the search engine will be able to identify the according results. After the user clicks on the **Search Component** button, a popup open which displays the possible compoenents that can be searched.

In the popup the user can click on one of the **Use** buttons to chose for which exact component he/she wants to find a similarity.

Below the text fields, the **Filter** area is displayed. If there haven't been any filters selected yet, nothing specific will be visible and the user needs to click on the down-side **arrow** button.

A **new filter tab** will open up and give the user the ability to add attributes that will a filter/selection effect on the overall similarity search. With clicking on the **+** button, the filter will be added to the overall filter selection, as multiple filters can be combined to define the search result.

4. Similarity Search - Result Investigation

Finally if all desired filters are selected, through a click on the **Start Similarity Search** button the Similarity Search will start and accordingly the interaction with the backend and machine learning model.

The first column shows the unique ID of the similar component. In the second column **Similarity Type.** The different similarity types are displayed and sorted in the following order: A/Upgrade, A, A/Downgrade, B/Upgrade, B, B/Downgrade, C. In the third column, the attributes in which the found similar component differs to the original on, are displayed under **Difference In.**

Through a click on the **Info** button, a new popup opens which shows the **Detailed View Component.**

Here all detailed attributes of both components are listed and are put next to each other in two columns. Now the user can really investigate both components and look at all the similarities and also, left-over differences.

Through a click on the **PDF** button, a linked PDF will be shown which displays the manufacturer description of the component.

5. Similarity Search - Adding New Component

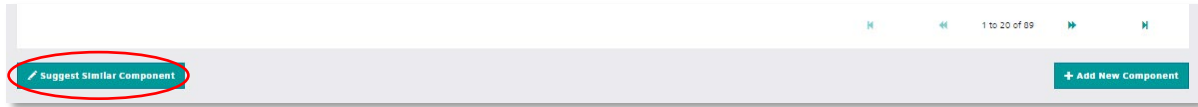At the very bottom, two more buttons are displayed.

Through a click on the **Add New Component** button.

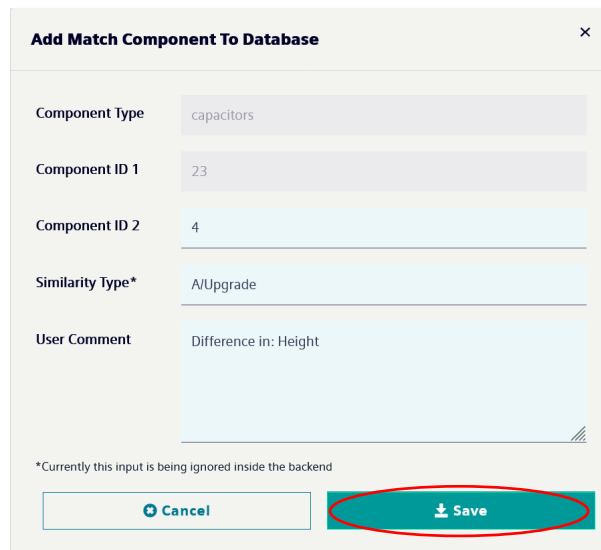The user can add a new component and enter all attributes for it.

6. Similarity Search - Suggest Similar Component

Als the user can click on the **Suggest Similar Component** button.
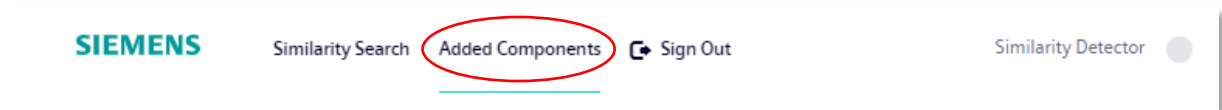

After clicking on the **Suggest Similar Component** button, the user can recommend a similarity from another already existing component to the searched component if his/her knowledge suggests this way. For this similarity he user can define a similarity type and leave an additional comment if necessary.
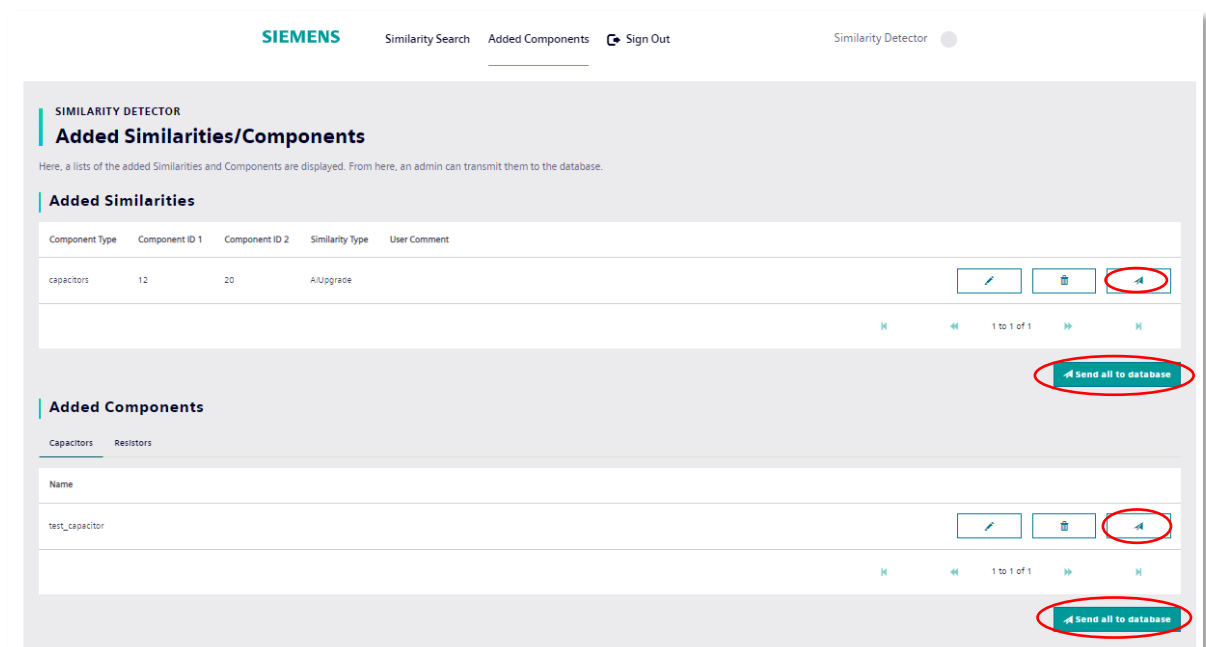
7. Added Components – Database Verification

If the user is signed with an administrator role he/she now also has the opportunity to select the **Added Components** tab.

There, the user now has the ability to review all the added components and added/suggested similarities that were added/recommended by him/her or any other "regular" user previously. The administrator can decide if he/she wants to edit the added similarities and components again or deny/delete them. If the administrator approves the added similarities and components, he/she can either send them individually or collectively to the database by clicking on the according button.

Finally, the user can always leave the Explainable Similarity Detector tool properly at any point by clicking on the **Sign Out** button.