

**CLAIMS**

1. A method of training an RPA robot to use a GUI, the method comprising:
  - capturing video of the GUI as an operator uses the GUI to carry out a process;
  - capturing a sequence of events triggered as the operator uses the GUI to carry out said process;
  - analyzing said video and said sequence of events to thereby generate a workflow which, when executed by an RPA robot, causes the RPA robot to carry out said process using the GUI,
  - wherein said analyzing further comprises:
    - identifying one or more interactive elements of the GUI from said video;
  - and
    - matching at least one of the events in the sequence of events as corresponding to at least one of the interactive elements, and wherein identifying a given interactive element of the one or more interactive elements comprises:
      - identifying one or more anchor elements in the GUI for the given interactive element; and
      - associating the one or more anchor elements with the given interactive element.
2. The method of claim 1 wherein a given anchor element of the one or more anchor elements is identified for the given interactive element based on an expected co-occurring of GUI elements.
3. The method of claim 1 or 2 wherein a given anchor element of the one or more anchor elements is identified for the given interactive element based on a proximity of the given anchor element to the given interactive element.
4. The method of any preceding claim wherein a given anchor element of the one or more anchor elements is identified for the given interactive element based on the types of the given anchor element and the given interactive element.

5. The method of claim 1 wherein the one or more anchor elements is identified for the given interactive element based on:
  - identifying a predetermined number of nearest GUI elements to the given interactive element as the one or more anchor elements using a k-nearest neighbor approach; and/or
  - identifying a predetermined number of nearest GUI elements in one or more predetermined directions from the given interactive element as the one or more anchor elements; and/or
  - identifying all GUI elements within a predefined region of the given interactive element as the one or more anchor elements.
6. The method of any preceding claim wherein each of the one or more anchor elements has an associated weight.
7. The method of claim 1 wherein identifying the one or more interactive elements is carried out by applying a trained machine learning algorithm to at least part of the video.
8. The method of any preceding claim wherein identifying the given interactive element comprises identifying positions of the one or more anchor elements in the GUI relative to the given interactive element.
9. The method of claim 8 wherein a machine learning algorithm is used to identify the one or more anchor elements based on one or more pre-determined feature values.
10. The method of claim 9 wherein the feature values are determined via training of the machine learning algorithm.
11. The method of claim 9 or 10 wherein the feature values include any one or more of:

distance between a first GUI element and a second GUI element,  
orientation of a first GUI element with respect to a second GUI element;  
and  
whether a first GUI element is in a same application window as a second  
GUI element.

12. The method of any preceding claim wherein the sequence of events  
comprise any one or more of:

- a keypress event;
- a hoverover event;
- a click event;
- a drag event; and
- a gesture event.

13. The method of any preceding claim comprising including based on the  
video one or more inferred events in the sequence of events.

14. The method of claim 13 wherein a hover event is inferred based on one or  
more interface elements becoming visible in the GUI.

15. The method of any preceding claim wherein the step of analyzing  
comprises:

- identifying a sequence of sub-processes of said process.

16. The method of claim 15 wherein a process output of one of the sub-  
processes of the sequence is used by the RPA robot as a process input to  
another sub-process of the sequence.

17. The method of claim 15 or claim 16 further comprising editing the  
generated workflow to include a portion of a previously generated workflow  
corresponding to a further sub-process, such that said edited workflow, when  
executed by an RPA robot, causes the RPA robot to carry out a version of said

process using the GUI, the version of said process including the further sub-process.

18. The method of claim 17 wherein the version of said process includes the further sub-process in place of an existing sub-process of said process.

19. The method of any preceding claim wherein the video and or the sequence of event are captured using a remote desktop system.

20. A method of carrying out a process using a GUI using an RPA robot trained by the method according to claim 1.

21. The method of claim 20 further comprising the RPA robot re-identifying one or more interactive elements in the GUI based on respective anchor elements specified in a workflow.

22. The method of claim 21 wherein a machine learning algorithm is used to re-identify the one or more interactive elements based on one or more pre-determined feature values.

23. The method of claim 22 wherein the feature values are determined via training of the machine learning algorithm.

24. The method of claim 22 or 23 wherein the feature values include any one or more of:

distance between a first GUI element and a second GUI element,  
orientation of a first GUI element with respect to a second GUI element;

and

whether a first GUI element is in a same application window as a second GUI element.

- 25. An apparatus arranged to carry out a method according to any one of claims 1 to 24.
- 26. A computer program which, when executed by a processor, causes the processor to carry out a method according to any one of claims 1 to 24.
- 27. A computer-readable medium storing a computer program according to claim 26.