

X-Ray projectional tool survey

The following questionnaire is part of a research on Computer Graphics Animation. This is a research project being conducted by Aaron Sújar Garrido at Rey Juan Carlos University.

You are invited to participate in this research project. However, your participation in this research study is voluntary. Indeed, you may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time.

The procedure involves filling an online survey that will take approximately less than 10 minutes. Your responses will be confidential and we do not collect identifying information such as your name, email address or IP address. To help protect your confidentiality, the survey will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only.

The survey questions will be about a projectional radiography simulator which we have developed. Please, take your time and answer the questions.

If you have any questions about the research study, please contact me at aaronsujar@gmail.com.

* Required

Demographic data

1. Years of practice *

2. Gender *

Mark only one oval.

- Female
- Male
- Prefer not to say

3. Speciality *

Mark only one oval.

- Radiologist
- Radiographer
- Other: _____

4. Job title *

Mark only one oval.

- Trainee
- Band 5
- Band 6
- Band 7
- Band 8 and above
- Other: _____

5. Country *

6. How confident do you feel when taking X-ray radiographs? *

1: No confidence I can't do this 5:Some confidence I can perform this under supervisor guidance
10: Full confidence: I can perform this unsupervised in all cases

Mark only one oval.

1 2 3 4 5 6 7 8 9 10

No
confidence:
I can't do
this

Full
confidence: I
can perform
this
unsupervised
in all cases

7. How confident do you feel when interpreting X-ray radiographs for diagnosis purposes? *

1: No confidence I can't do this 5:Some confidence I can perform this under supervisor guidance
10: Full confidence: I can perform this unsupervised in all cases

Mark only one oval.

1 2 3 4 5 6 7 8 9 10

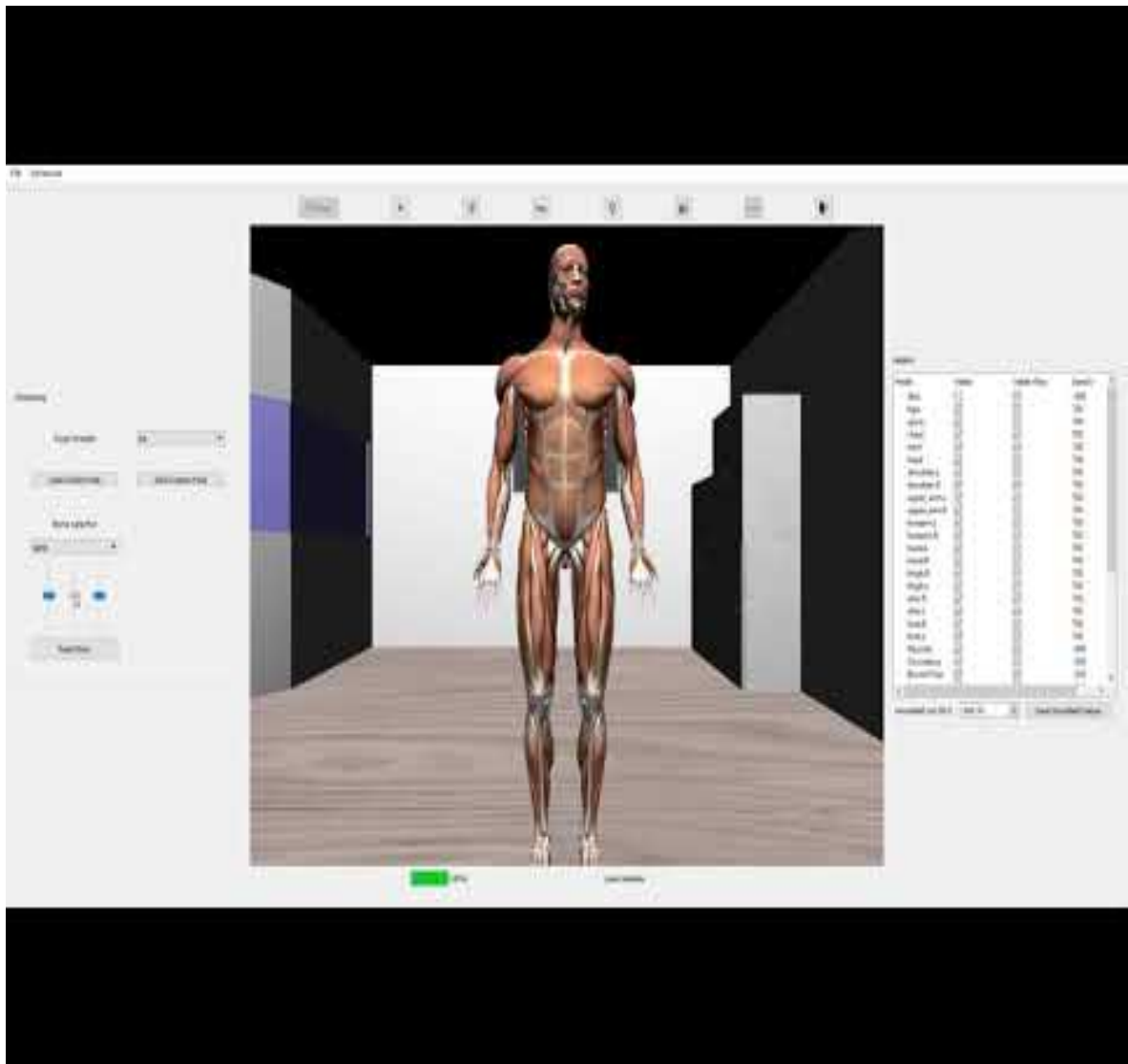
No
confidence:
I can't do
this

Full
confidence: I
can perform
this
unsupervised
in all cases

Positioning

In our system, the user starts the procedure selecting the patient pose. The simulator provides a set of predefined poses. Additionally, the user can select the pose moving the bones directly. How much do you agree with the following statements (1 = strongly disagree, 2 = somewhat disagree, 3 = acceptable, 4 = somewhat agree, 5 = strongly agree)

Please watch the following video before answering:



<http://youtube.com/watch?v=zitw5-Xk4dY>

8. The patient model before selecting the posing is visually realistic. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

9. The deformation of the patient's internal anatomy is visually realistic. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

10. Selecting the patient pose from a set of predefined ones is useful for self-guided training *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

11. **Selecting the patient manually is useful for self-guided training. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

12. **Selecting the patient pose from a set of predefined ones is useful to teach the procedure. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

13. **Selecting the patient manually is useful for teaching purposes (e.g. for live demonstration in the lecture theatre). ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

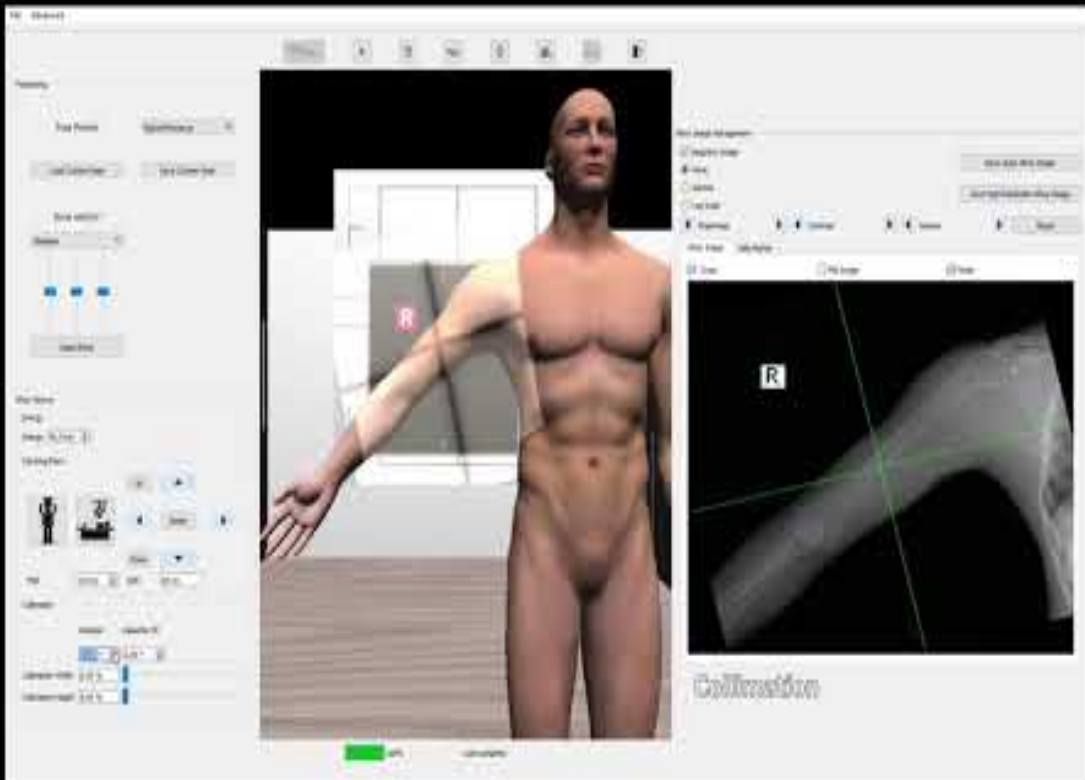
X-ray configuration

After the patient positioning the users usually must:

1. Select and place the side markers
2. Adjust the beam direction and FRD
3. Perform the centring
4. Adjust the collimation.
5. Configure the beam energy

How much do you agree with the following statements (1 = strongly disagree, 2 = somewhat disagree, 3 = acceptable, 4 = somewhat agree, 5 = strongly agree)

Please watch the following video before answering:



<http://youtube.com/watch?v=EdyDqvGr8ww>

14. The previously described steps characterize the procedure in a realistic way. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

15. The placement of the side markers on the x-ray image is visually realistic. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

16. The changes in the final x-ray image due to the adjustment of the beam direction and FRD are visually realistic. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

17. **The adjustment of the centre is visually realistic. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

18. **The changes in the final x-ray image due to the collimation adjustment are visually realistic. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

19. **The changes in the final x-ray image due to beam energy configuration are visually realistic. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

20. **In general, the changes in the final x-ray image due to modification of the different parameters are visually realistic. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

21. **Regarding the previously described steps, the simulator is useful to teach the procedure. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

22. **Regarding the previously described steps, the simulator is useful for self-guided training. ***

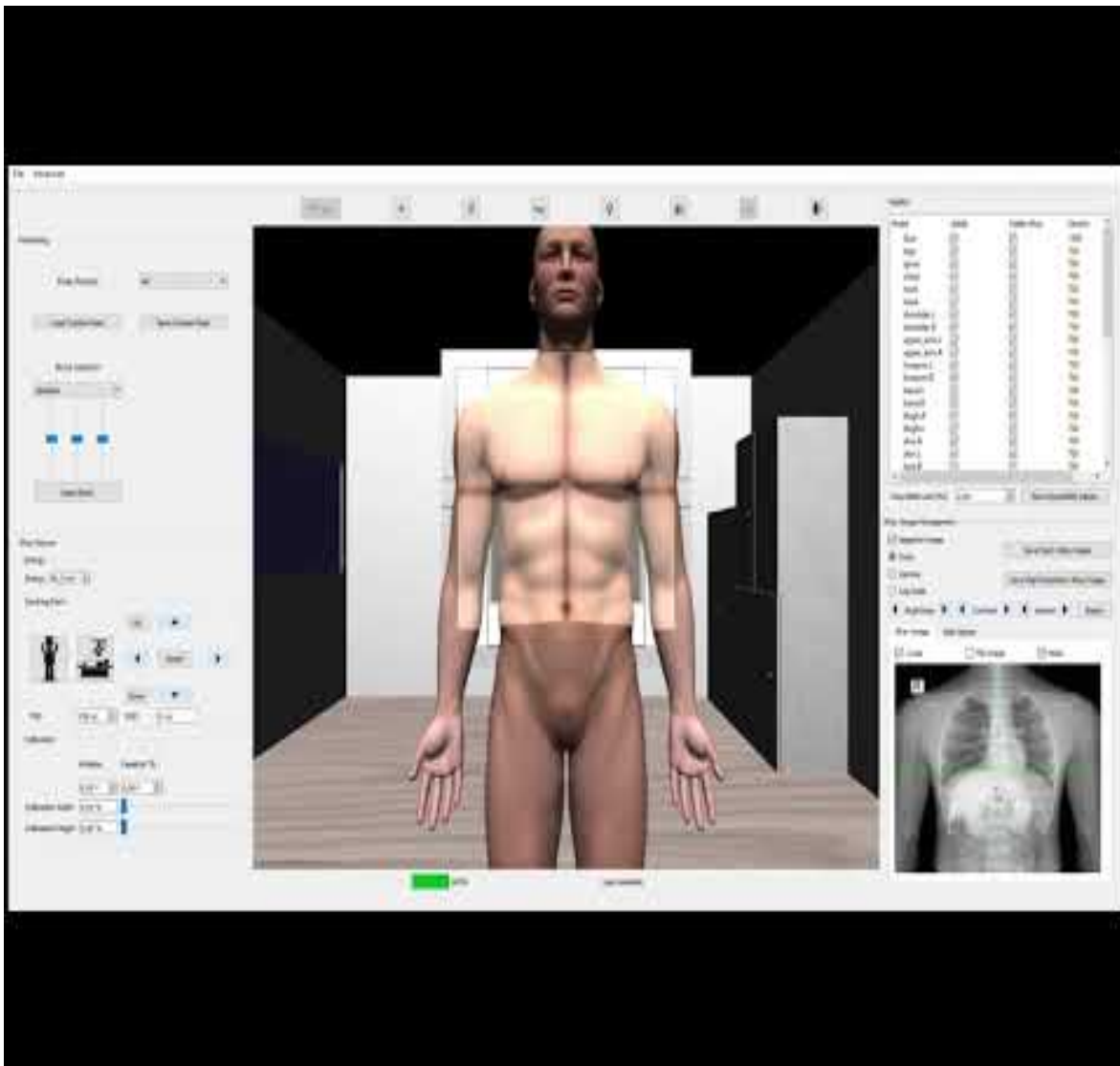
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

Digital image manipulation

Finally, the user can edit the x-ray image.

Please watch the following video before answering



<http://youtube.com/watch?v=x7KGsNSMSh8>

23. The adjustment of the brightness and contrast settings is visually realistic. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

24. The use of image filters is visually realistic *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

25. In general, digital image manipulation of the X-ray image is useful for self-guided training and teaching *

Mark only one oval.

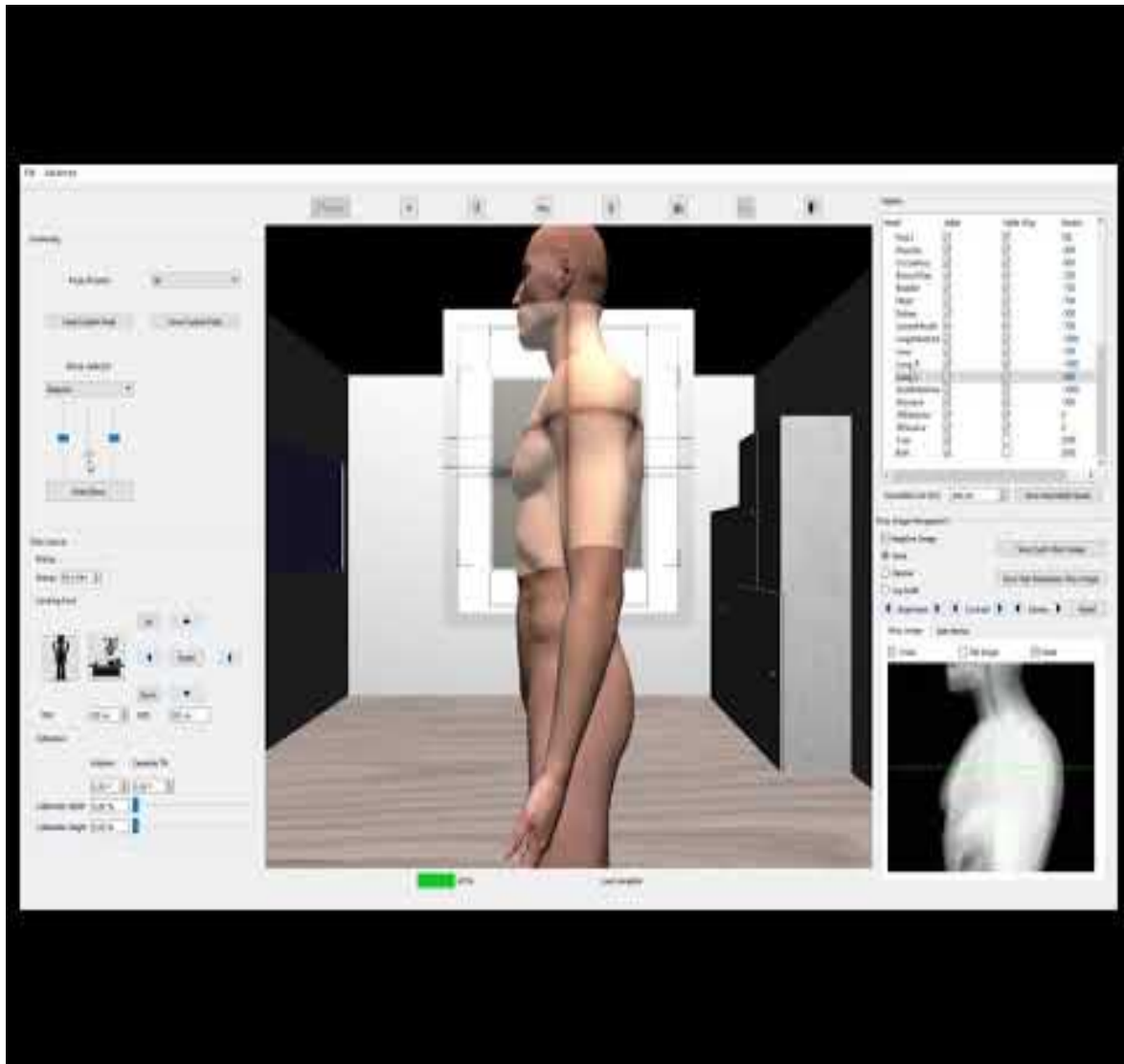
1 2 3 4 5

Strongly disagree Strongly agree

Extra functionality

In the simulator, it is possible to modify anatomy's internal properties in order to get multiple varieties of cases. It is also possible to introduce foreign objects inside the internal anatomy.

Please watch the following video before answering:



<http://youtube.com/watch?v=O2K2ojcExTc>

26. The simulation of diseases is visually realistic *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

27. The inclusion of foreign objects in the virtual patient is visually realistic. *

Mark only one oval.

1 2 3 4 5

Strongly disagree Strongly agree

28. **Regarding the functionality described, this is useful to teach the procedure. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

29. **Regarding the functionality described, this is useful for self-guided training. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

Finally

30. **Generally speaking, the simulator is visually realistic. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

31. **Generally speaking, the simulator is suitable is useful as a teaching tool. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

32. **Generally speaking, the simulator is suitable for self-guided training. ***

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

33. **Further comments:**

(write here any comment you may have, please constructive feedback by highlighting pros and cons, new features you wish to be developed, etc.)
