

Einleitung Attitudes

We would like to know how you generally think about algorithms.

Please indicate how much you agree with the following statements.

AA02
I think..

completely disagree	strongly disagree	somewhat disagree	undecided	somewhat agree	strongly agree	completely agree
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Algorithms can relieve people of difficult decisions.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms cannot consider the consequences of a decision.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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algorithm-based decisions are too impersonal for me.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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that certain decisions should only be made by people.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms prefer no one.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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that many people would simply follow algorithm-based recommendations.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms can save decision makers a lot of work.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms have no prejudices.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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algorithm-based decisions are too uncertain for me.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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it is problematic that algorithms cannot be held responsible

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms have no good and no bad days.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Recommendations by an algorithm lead to people thinking less about decisions.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms can process more data than a human.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms can analyze data faster than a human.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Algorithms apply the same scale to everyone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms make decisions more responsibly than humans.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms can not be held responsible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms should not make morally difficult decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms treat all people equally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
algorithm-based decisions are not transparent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People could let themselves be determined by algorithms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms are not suitable for making personal decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms are less flexible than humans in evaluating decision factors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms are not aware of the responsibility of a decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms can make decisions that no human should have to make.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms cannot be bribed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms can make more precise decisions than a human.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algorithms are completely rational and therefore comprehensible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ABCDEs Introduction

This algorithm was developed with the "ABCDE method" in mind. This is a common method for detecting melanoma by visual inspection. It can help both medical laypersons and clinicians to identify features in a skin lesion that could indicate melanoma.

Please read the following text carefully.

ABCDE Method

Asymmetry:

A stands for asymmetry. A melanocytic nevus (harmless mole) is usually symmetrical, while a melanoma often has an irregular or asymmetrical shape.

Border Irregularity:

B stands for Border Irregularity, i.e. irregularity at the border. A melanocytic nevus (harmless liver spot) has smooth and even edges, while a melanoma often has irregular and difficult to define edges.

Color Variation:

C stands for Color Variation. A melanocytic nevus (harmless mole) usually has a single shade or two shades, one entering the other or repeating regularly (generally pink, brown, or tan). Melanoma can be brown but can have up to five or six colors (blue, black, brown, tan, grey, pink, and red). These colors are unevenly or irregularly distributed.

Diameter greater than 6mm:

D stands for diameter. Most melanomas have a diameter of more than 6 mm when they are diagnosed.

Evolution:

E stands for Evolution or change. A melanocytic nevus (harmless mole) is usually stable and does not change in size, shape, or color, whereas a melanoma changes over time. Changes in size, color, shape, or structure can become noticeable over months to years.

1. The following are the diameters measured for spots on 5 different people for the diagnosis of Melanoma. Which is most likely to be a Melanoma based on the diameter?

AC03

- ☐ 4.0 mm
- ☐ 5.1 mm
- ☐ 6.9 mm
- ☐ 5.5 mm
- ☐ 3.6 mm

Introduction

Please read the following task description carefully.

We would like to ask you to put yourself in the role of the treating dermatologist.

Based on the information available to you, you will decide how likely the birthmark could be melanoma and whether you would have a biopsy performed.

Below are some cases where you should make this decision. In the example below you can see that the following information is available to you:

- You can analyze the image of the melanoma using the well-known ABCDE formula.
- You can ask the patient whether the melanoma has changed over time in terms of color, shape or size.
- You can ask the patient whether there has been any itching or bleeding at the birthmark.

Example: Image of a birthmark for analysis with accompanying information



- The spot on the skin has slightly increased in size over the last four months (6.2mm to 6.6mm). It does not itch or bleed.

Demo case

Seite 04

MANIPUL

In addition to the case descriptions you will receive a risk assessment of our algorithm in the following form.

Transparency_All

The risk assessment algorithm predicts that there is a 20% probability that this mole is a melanoma.

This algorithm was developed by us to help dermatologists in the assessment of moles.

Transparency_Low

2. From the information provided on the previous pages, I can say that:

AC02

For the survey...

- ☐ I'm not getting a recommendation from an algorithm
- ☐ I get a recommendation from a person
- ☐ I get a recommendation from an algorithm

Seite 05

EXPEVAL

Please evaluate the information you have received about the algorithm:

BE01

The explanation was...

not understandable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	understandable
hard to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	easily understandable
misleading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unambiguous
not useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	helpful
uninformative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	informative
overwhelming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Underchallenging
very short	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very long

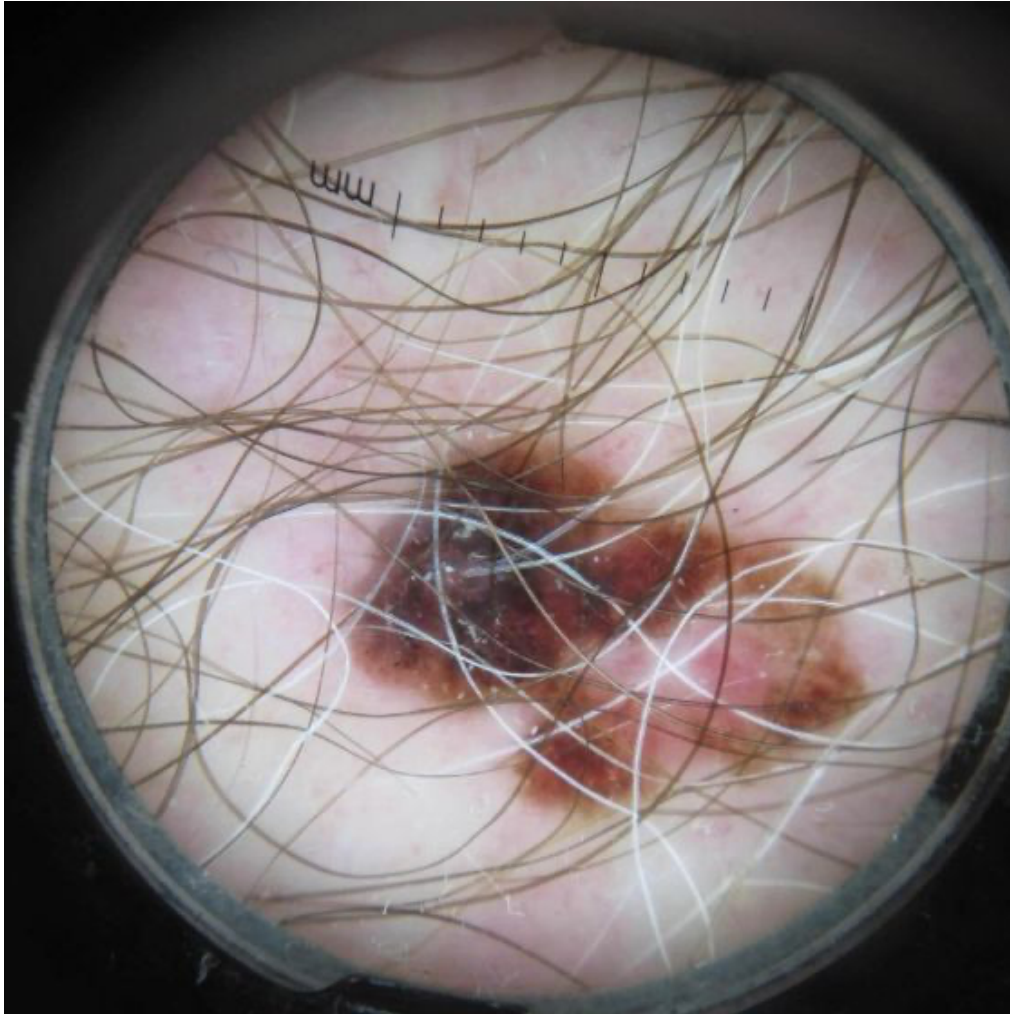
Please indicate to what extent you agree with the following statements.

BE02

	completely disagree	strongly disagree	somewhat disagree	undecided	somewhat agree	strongly agree	completely agree
I think I know how to use the algorithm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I know how the algorithm works.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I have a good grasp of the algorithm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 84%.
- The spot on the skin has been growing in size and the borders of the spot are irregular.

CP1

Make a prediction

PR01

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma? (in %)

0%

100%


DC01

Make a decision☐

A biopsy should be performed on the patient

☐

No biopsy should be performed on the patient.

How sure are you of your decision?**CS01** ☐Not at all
sure/sehr unsicher☐


Not sure/unsicher

☐

Moderate/moderat

☐

Sure/sicher

☐Very Sure/sehr
sicher**How reliable do you consider the recommendation of the algorithm to be?****CA01** ☐Not at all
reliable/sehr
unzuverlässig☐Not Reliable/
unzuverlässig☐

Moderate/moderat

☐

Reliable/zuverlässig

☐Very Reliable/sehr
zuverlässig**Seite 07**

CN1

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 12%.
- The spot on the skin has faded over time.

CN1**Make a prediction****PR02**

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision**DC02**

A biopsy should be performed on the patient



No biopsy should be performed on the patient.

CS02

How sure are you of your decision?

- ☐ Not at all sure/sehr unsicher
- ☐ Not sure/unsicher
- ☐ Moderate/moderat
- ☐ Sure/sicher
- ☐ Very Sure/sehr sicher

How reliable do you consider the recommendation of the algorithm to be?CA02 

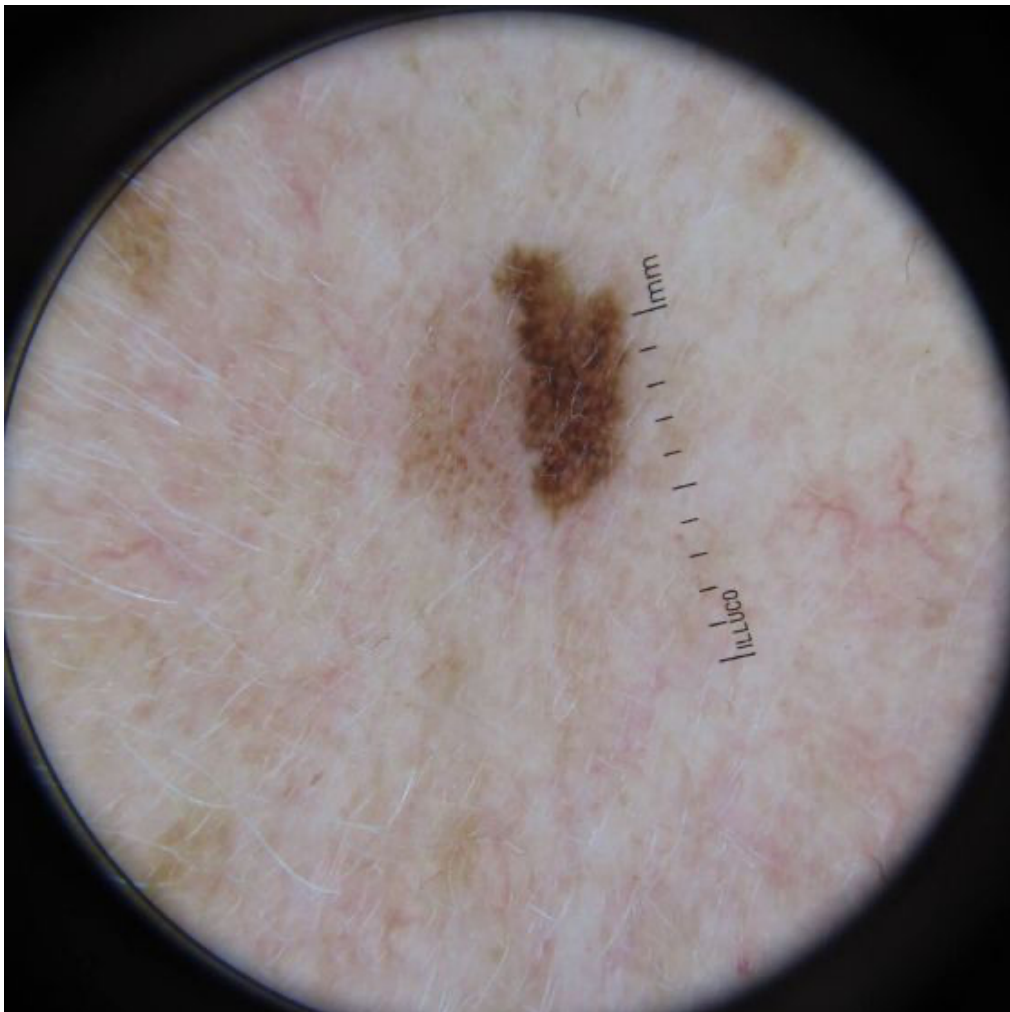
- ☐ Not at all reliable/sehr unzuverlässig
- ☐ Not Reliable/unzuverlässig
- ☐ Moderate/moderat
- ☐ Reliable/zuverlässig
- ☐ Very Reliable/sehr zuverlässig

Seite 08

A1

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 54%
- The spot on the skin has slightly increased in 4 months (6.2mm to 6.6mm).

Amb1

Make a prediction

PR03

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC03



A biopsy should be performed on the patient



No biopsy should be performed on the patient.

How sure are you of your decision?

CS03

Not at all
sure/sehr unsicher

Not sure/unsicher



Moderate/moderat



Sure/sicher

Very Sure/sehr
sicher**How reliable do you consider the recommendation of the algorithm to be?**

CA03

Not at all
reliable/sehr
unzuverlässigNot Reliable/
unzuverlässig

Moderate/moderat



Reliable/zuverlässig

Very Reliable/sehr
zuverlässig**Seite 09**


FP1

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title




- Prediction from the Algorithmic Decision Making by AI for Melanoma: 79%. **FP1**
- The spot has smooth even borders and the pigmented component fades towards outside.

Make a prediction**PR04** 

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%


100%

Make a decision**DC04** 

A biopsy should be performed on the patient



No biopsy should be performed on the patient.

CS04 

How sure are you of your decision?

- ☐ Not at all sure/sehr unsicher ☐ Not sure/unsicher ☐ Moderate/moderat ☐ Sure/sicher ☐ Very Sure/sehr sicher

How reliable do you consider the recommendation of the algorithm to be?CA04 

- ☐ Not at all reliable/sehr unzuverlässig ☐ Not Reliable/unzuverlässig ☐ Moderate/moderat ☐ Reliable/zuverlässig ☐ Very Reliable/sehr zuverlässig

Seite 10

CN2

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 6%
- No additional information was available for this case.

CN2

Make a prediction

PR05

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC05

☐ A biopsy should be performed on the patient

☐ No biopsy should be performed on the patient.

How sure are you of your decision?

CS05

☐ Not at all
sure/sehr unsicher

☐ Not sure/unsicher

☐ Moderate/moderat

☐ Sure/sicher

☐ Very Sure/sehr
sicher

How reliable do you consider the recommendation of the algorithm to be?

CA05

☐ Not at all
reliable/sehr
unzuverlässig

☐ Not Reliable/
unzuverlässig

☐ Moderate/moderat

☐ Reliable/zuverlässig

☐ Very Reliable/sehr
zuverlässig

Seite 11

FN1

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 15%.
- The size of the spot is 7mm, and the borders of the spot are irregular.

FN1

Make a prediction

PR06

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC06



A biopsy should be performed on the patient



No biopsy should be performed on the patient.

CS06

How sure are you of your decision?

- ☐ Not at all sure/sehr unsicher ☐ Not sure/unsicher ☐ Moderate/moderat ☐ Sure/sicher ☐ Very Sure/sehr sicher

How reliable do you consider the recommendation of the algorithm to be?CA06 

- ☐ Not at all reliable/sehr unzuverlässig ☐ Not Reliable/unzuverlässig ☐ Moderate/moderat ☐ Reliable/zuverlässig ☐ Very Reliable/sehr zuverlässig

Seite 12

A2

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 48%
- No additional information was available for this case.

Amb2

Make a prediction

PR07

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC07



A biopsy should be performed on the patient



No biopsy should be performed on the patient.

How sure are you of your decision?

CS07

Not at all
sure/sehr unsicher

Not sure/unsicher



Moderate/moderat



Sure/sicher

Very Sure/sehr
sicher**How reliable do you consider the recommendation of the algorithm to be?**

CA07

Not at all
reliable/sehr
unzuverlässigNot Reliable/
unzuverlässig

Moderate/moderat



Reliable/zuverlässig

Very Reliable/sehr
zuverlässig**Seite 13**

A3

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 51%.
- The color of lesion has become darker over a period of 2 years.

Amb3**Make a prediction****PR08**

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision**DC08**

A biopsy should be performed on the patient



No biopsy should be performed on the patient.

CS08

How sure are you of your decision?

- ☐ Not at all sure/sehr unsicher ☐ Not sure/unsicher ☐ Moderate/moderat ☐ Sure/sicher ☐ Very Sure/sehr sicher

How reliable do you consider the recommendation of the algorithm to be?CA08 

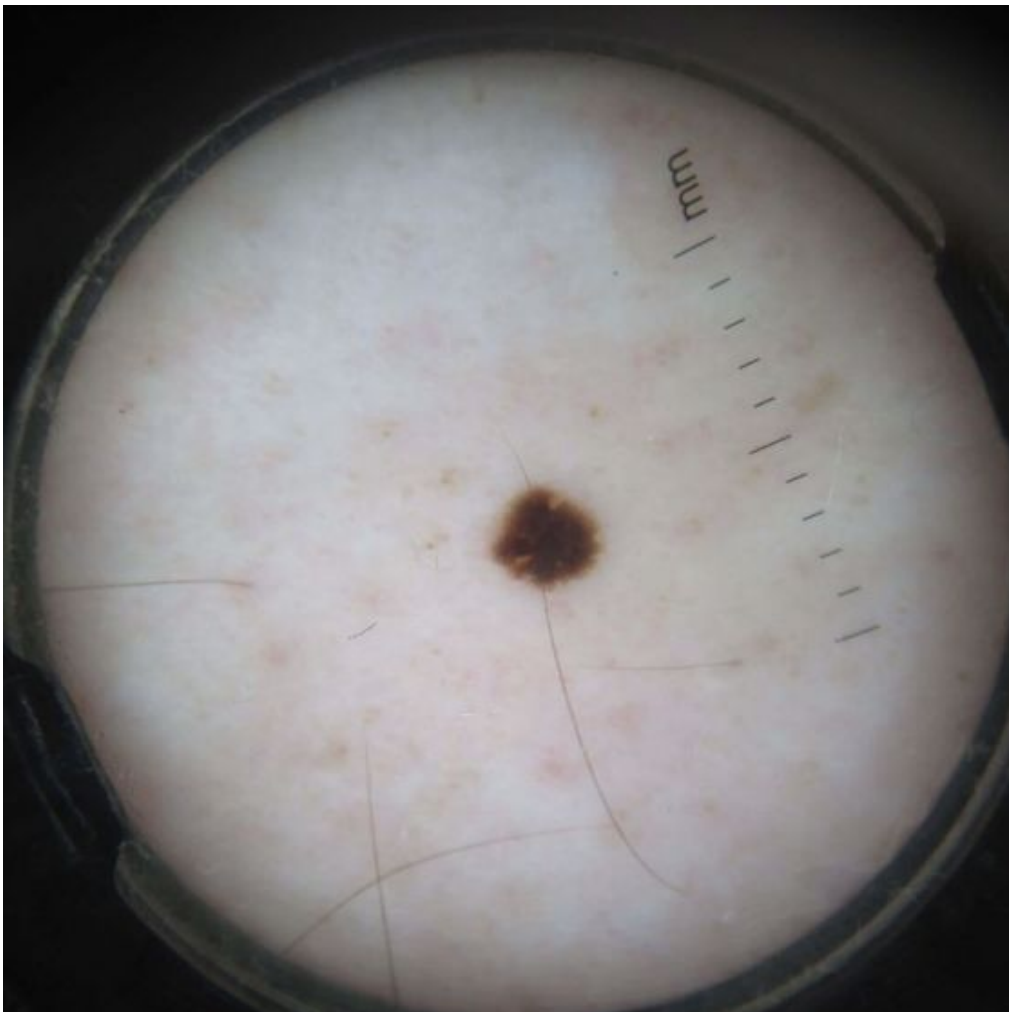
- ☐ Not at all reliable/sehr unzuverlässig ☐ Not Reliable/unzuverlässig ☐ Moderate/moderat ☐ Reliable/zuverlässig ☐ Very Reliable/sehr zuverlässig

Seite 14

CP3

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 75%.
- The color of the lesion has become darker and the size has slightly grown.

CP3

Make a prediction

PR09

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC09

☐ A biopsy should be performed on the patient

☐ No biopsy should be performed on the patient.

How sure are you of your decision?

CS09

☐ Not at all
sure/sehr unsicher

☐ Not sure/unsicher

☐ Moderate/moderat

☐ Sure/sicher

☐ Very Sure/sehr
sicher

How reliable do you consider the recommendation of the algorithm to be?

CA09

☐ Not at all
reliable/sehr
unzuverlässig

☐ Not Reliable/
unzuverlässig

☐ Moderate/moderat

☐ Reliable/zuverlässig

☐ Very Reliable/sehr
zuverlässig

Seite 15

FN2

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 43%. **FN2**
- The color of the lesion has become darker, also it has become firmer. The size has slightly grown increased.

Make a prediction**PR10**

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision**DC10**

A biopsy should be performed on the patient



No biopsy should be performed on the patient.

CS10

How sure are you of your decision?

- ☐ Not at all sure/sehr unsicher ☐ Not sure/unsicher ☐ Moderate/moderat ☐ Sure/sicher ☐ Very Sure/sehr sicher

How reliable do you consider the recommendation of the algorithm to be?

CA10 

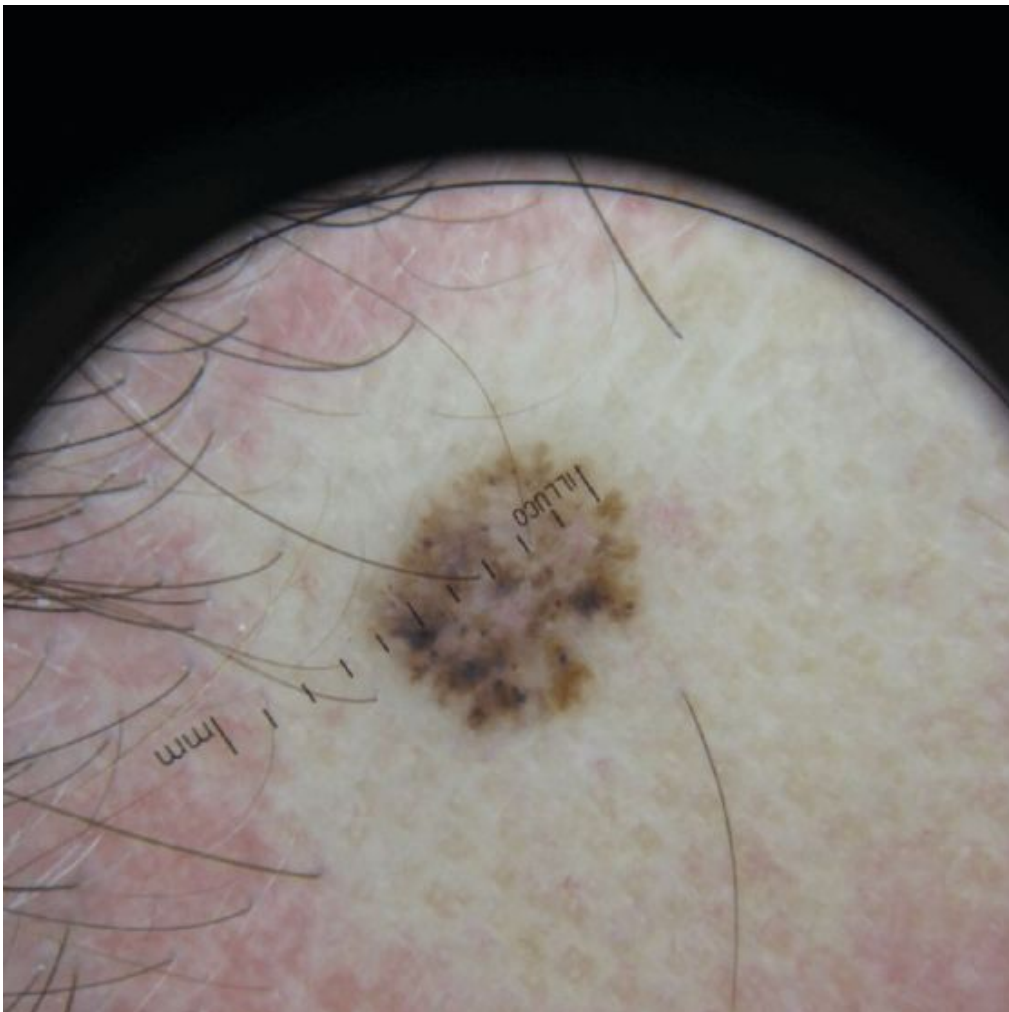
- ☐ Not at all reliable/sehr unzuverlässig ☐ Not Reliable/unzuverlässig ☐ Moderate/moderat ☐ Reliable/zuverlässig ☐ Very Reliable/sehr zuverlässig

Seite 16

A4

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 47%.
- The spot has an approximate diameter of 5.9mm

Amb4

Make a prediction

PR11

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC11



A biopsy should be performed on the patient



No biopsy should be performed on the patient.

How sure are you of your decision?

CS11

Not at all
sure/sehr unsicher

Not sure/unsicher



Moderate/moderat



Sure/sicher

Very Sure/sehr
sicher**How reliable do you consider the recommendation of the algorithm to be?**

CA11

Not at all
reliable/sehr
unzuverlässigNot Reliable/
unzuverlässig

Moderate/moderat



Reliable/zuverlässig

Very Reliable/sehr
zuverlässig**Seite 17**

A5

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 49%. **Amb5**
- The size of the spot on the skin hasn't grown for over 2 years, but it has irregular boundaries and dark color.

Make a prediction**PR12**

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision**DC12** 

A biopsy should be performed on the patient



No biopsy should be performed on the patient.

How sure are you of your decision?

CS12

☐

Not at all
sure/sehr unsicher

☐

Not sure/unsicher

☐

Moderate/moderat

☐

Sure/sicher

☐

Very Sure/sehr
sicher

How reliable do you consider the recommendation of the algorithm to be?

CA12

☐

Not at all
reliable/sehr
unzuverlässig

☐

Not Reliable/
unzuverlässig

☐

Moderate/moderat

☐

Reliable/zuverlässig

☐

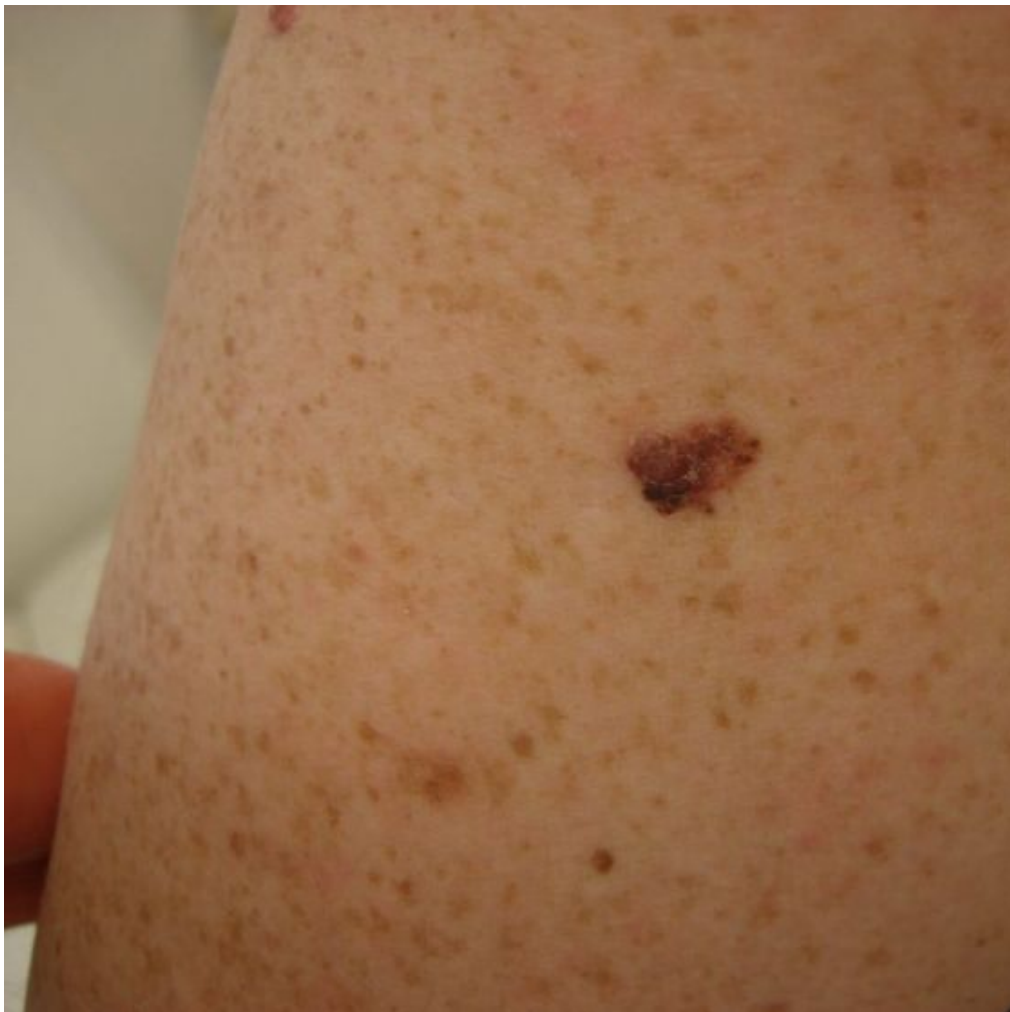
Very Reliable/sehr
zuverlässig

Seite 18

CP4

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 96%.
- The spot has become firm and is continuously growing in size.

CP4

Make a prediction

PR13

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC13



A biopsy should be performed on the patient



No biopsy should be performed on the patient.

How sure are you of your decision?

CS13

Not at all
sure/sehr unsicher

Not sure/unsicher



Moderate/moderat



Sure/sicher

Very Sure/sehr
sicher**How reliable do you consider the recommendation of the algorithm to be?**

CA13

Not at all
reliable/sehr
unzuverlässigNot Reliable/
unzuverlässig

Moderate/moderat



Reliable/zuverlässig

Very Reliable/sehr
zuverlässig**Seite 19**

CN5

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 4%.
- No change in size, color, shape, or structure noted.

CN5**Make a prediction****PR14**

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision**DC14**

A biopsy should be performed on the patient



No biopsy should be performed on the patient.

CS14

How sure are you of your decision?

- ☐ Not at all sure/sehr unsicher
- ☐ Not sure/unsicher
- ☐ Moderate/moderat
- ☐ Sure/sicher
- ☐ Very Sure/sehr sicher

How reliable do you consider the recommendation of the algorithm to be?CA14 

- ☐ Not at all reliable/sehr unzuverlässig
- ☐ Not Reliable/unzuverlässig
- ☐ Moderate/moderat
- ☐ Reliable/zuverlässig
- ☐ Very Reliable/sehr zuverlässig

Seite 20

CP5

Please look at the image and read the information given below carefully. And answer the following questions.

00STYLE_Resi Case title



- Prediction from the Algorithmic Decision Making by AI for Melanoma: 97%.
- The spot has been itchy and shows no signs of healing. The skin has become darker around the spot, with blood clots forming around the spot.

CP5

Make a prediction

PR15

What, according to you, is the probability that the spot on skin in the image shown above is Melanoma?(in %)

0%

100%

Make a decision

DC15

☐ A biopsy should be performed on the patient

☐ No biopsy should be performed on the patient.

How sure are you of your decision?

CS15

☐ Not at all
sure/sehr unsicher

☐ Not sure/unsicher

☐ Moderate/moderat

☐ Sure/sicher

☐ Very Sure/sehr
sicher

How reliable do you consider the recommendation of the algorithm to be?

CA15

☐ Not at all
reliable/sehr
unzuverlässig

☐ Not Reliable/
unzuverlässig

☐ Moderate/moderat

☐ Reliable/zuverlässig

☐ Very Reliable/sehr
zuverlässig

Seite 21
POSTSURVEY

You have now processed all 15 cases. Please answer the questions below.

Perception Intro

BE03

Please indicate to what extent you agree with the following statements.

	completely disagree	strongly disagree	somewhat disagree	undecided	somewhat agree	strongly agree	completely agree
I think I have a good grasp of the algorithm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I know how to use the algorithm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I know how the algorithm works.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	completely disagree	strongly disagree	disagree	undecided	agree	strongly agree	PO04 <input type="radio"/> completely disagree
I have largely ignored the algorithm in my decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The algorithm was very helpful in the decision making process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have incorporated the recommendations of the algorithm into my decision-making process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the recommendations of the algorithm reasonable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The recommendations of the algorithm were in line with my assessment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The recommendations of the algorithm were easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my opinion the algorithm did not give good recommendations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The algorithm made errors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The algorithm was unreliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how much you agree with the following :

PO02 ☐

“The decisions of algorithm influenced my decisions”

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strongly Disagree	Somewhat Disagree	Moderate	Somewhat Agree	Strongly agree

Please indicate how fair you consider the algorithm to be:

PO03 ☐

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Very Unfair	Somewhat Unfair	Moderate	Somewhat Fair	Strongly Fair

I think it is good when decision-makers in the medical system receive assistance from algorithm-based recommendation systems. PO05

Please indicate how much you agree with the following statement.

☐ Strongly Disagree
 ☐ Somewhat Disagree
 ☐ Moderate
 ☐ Somewhat Agree
 ☐ Strongly Agree

Seite 22
CON

Algorithm-based recommendation systems are also used in many other areas. We have listed four of these use cases below. CV03

Please sort them according to their severity. The most serious use case should be placed on rank 1.

There are two ways to sort the terms. Either (a) you drag the cards with the mouse to a free rank or (b) you click on them one after another with a double click.

*Triage = The prioritization of medical aid in case of resource shortage. Example: Who will receive life-sustaining treatments during the Covid-19 pandemic and who will not.

Diagnosis of skin cancer	Selection of applicants in a company	1
Decisions in the criminal justice system	Recommendations in a dating app	2
Triage*		3
		4
		5

CV04

Please sort the use cases now according to which case you would most likely agree to the use of a recommendation system.

Diagnosis of skin cancer	Selection of applicants in a company	1
Decisions in the criminal justice system	Recommendations in a dating app	2
		3
		4
		5

Triage*

Seite 23
DEM

In the following, we would like to collect some demographic information

DE01

3. Please indicate your gender

DE02

4. Please indicate the age group you belong to.

DE06

[Please choose]

5. In what setting did you learn the basics of the ABCDE method?

DE14

For example, course module name, event or training.

6. Please name the institution where you learned the basics of the ABCDE method.

DE15


For example, name of the university, clinic or practice.

DE10


7. Please indicate your field of study.

8. If you are currently studying, please indicate your study semester.

DE11

9. How would you rate your knowledge in the following areas?DE09 **Knowledge in the area of**

	non-existent	minimal	moderate	advanced	very advanced
Computer Science (general)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Machine Learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dermatology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Please state your general opinion on the use of algorithm-based recommendation systems.DE12 


☐

I am more **in favor** of the use of algorithm-based recommendation systems.

☐

I am rather **against** the use of algorithm-based recommendation systems.

Please give a short justification for your decision.

DE13 

Why:

Thank you very much!

Thank you for taking the time to participate in this survey.

At the end of the survey, we would like to inform you about the background of our scientific question.

This study investigates to what extent people include the decision template of an algorithm in their own decision making. In this study we investigate the influence of:

- 1) little as opposed to detailed information about the algorithm on the probability that people will include the algorithm's recommendation in their decision making.
- 2) the reliability of the algorithm (algorithm makes no mistakes or makes mistakes) on the probability that people will include the algorithm's recommendation in their decision.

They were shown little information and the algorithm made mistakes.

To ensure that all study participants receive the same cases and recommendations, no real algorithm was used in this study. The cooperation with the Department of Computer Science of the RWTH Aachen University and the Department of Dermatology of the RWTH Aachen University does not exist and served to make the cases appear credible.

Even though no algorithm was developed in the context of this survey, algorithms of this kind exist with a very good prediction probability. Our investigation helps to find out how such systems can be used responsibly by experts in the future.

Should you discover conspicuous skin marks on yourself after this study, please contact your family doctor or a dermatologist.

If you have further questions about the content of this study, please send us an email with the subject "Question about the Derma Algorithm Study" to itec@humtec.rwth-aachen.de.

On the following page, you have the opportunity to participate in the lottery mentioned at the beginning of the survey. Thank you again for taking the time to support us in our research.

- ☐ I would like to participate in the **lottery**. I agree that my e-mail address will be saved until the winner is drawn. My interview will continue to be anonymous and my email address will not be passed on to third parties.

TEST

Thank you very much for your participation!

We would like to thank you very much for your support.

Your answers have been saved, you can now close the browser window.

[B.Sc. Sören Schöder](#), [B. Eng. Sourabh Zanwar](#), [Prof. Astrid Rosenthal-von der Pütten](#), RWTH Aachen