

Investigating people's attitudes towards AI with a smart photo booth

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Extended abstract. With the increasing impact of AI in people's everyday lives, multidisciplinary research on the public perception and understanding of AI is more important than ever. The development and implementations of smart technologies and AI in our society raises many urgent, societally and culturally relevant questions: How do people think and feel about AI? Can they recognise, understand and evaluate the processes involved in AI-driven decision-making? What mental models do they use when interacting with AI systems — are these models similar to those of humans or more like models of machines? Yet, research that attempts to answer these questions is scarce.

In this paper, we emphasise the need to address such questions concerning AI attitude, the public understanding of AI and Human-AI Interaction from a multidisciplinary perspective. We combine expertise from both social science and computer science, and take steps in the direction of such a multidisciplinary approach towards AI problems. We present a first pilot study, illustrating how AI systems can be used to research people's AI attitude. The proposed setup takes the form of an intelligent photo booth called "misidentify.me" capable of detecting humans and identifying a range of objects and animals.

During this pilot, visitors of a film festival were challenged to fool the AI and take a selfie on which the intelligent photo booth would not identify them as a human being. This idea is rooted in the observation that machines are getting smarter and the consequent question whether we humans are still smart enough to fool them. More specifically, we were interested whether and how people's interaction with AI systems and their ability to outsmart them affect their AI attitude.

The photo booth was realized with web technologies, which makes it possible to also offer the experience online and to extend the study with an online experiment in the future. The core functionalities are realized with a combination of p5.js (see <https://p5js.org/>) and ml5.js (see <https://ml5js.org/>). In particular ml5's version of PoseNet was used to estimate a "humanness" score, whereas its MobileNet model for image classification was used to determine a "somethingness"

score. The two scores were compared to determine the ultimate label assigned to each selfie, tagging it either as a “human” or labelling it with the name of the identified object/animal.

In order to investigating people’s attitude towards AI, we used a quasi-experimental 1 factorial (identified as human yes/no) pretest-posttest design, in which two dependent variables – thoughts and feelings about AI (Cronbach $\alpha = .67 - .95$) were measured both before and after interacting with the smart photo booth. Participants were allocated in two groups depending on whether or not the AI identified them as humans. After cleaning up the data, we ended up with a small sample size (N=25). Because of this small size, no inferential analyses were conducted. However, the descriptive statistics show some interesting things. In table 1 the general feelings and thoughts on AI are displayed. As one can see, the overall attitude is more on the negative side, with a score well below the midpoint of the 0-100 scale. In addition, the pretest and posttest data suggest that once participants had endured interaction with the photo booth, their feelings and thoughts became even more negative.

Table. 1. Descriptive statistics (N=25)

	<i>Feelings</i>		<i>Thoughts</i>	
	M(SD)	Min-Max	M(SD)	Min-Max
Pretest	36.73 (15.63)	1- 63.80	40.79 (10.57)	16.56- 57.44
Posttest	32.70 (16.39)	.87- 64.0	35.97 (14.90)	.89- 56.89

Comparison of means between the groups show participants have a more positive attitude towards AI when they succeeded in fooling the AI (Feelings: M=34.68, SD=17.85, Thoughts: M = 37.88, SD = 15.5) than the participants that were successfully identified as human by the AI (Feelings: M=30.56, SD=15.12, Thoughts: M=33.90, SD=14.57).

The many conversations and informal observations revealed that our installation creates AI awareness and fosters dialogue and reflection. At least some people seemed rather surprised and impressed by the capabilities of the AI system and/or the outcome – even though similar AI technology is already a part of many people’s everyday lives. This raises the question whether people are aware of the AI systems that are already part of their lives and highlights the need for research into what we call “AI literacy” – the question whether people can recognise, understand and evaluate the involvement of AI systems when using technology. Based on exploratory observations, we conclude that multidisciplinary research into AI attitude, Human-AI-interaction, AI literacy and the social impact of AI in people’s immediate vicinity is a promising and much needed research direction.