

Challenges for the Design of Social Al Agents

Prof. Michael Hoffmann (Lead), Assistant Director for Responsible AI, AI-ALOE Georgia Tech Sanaz Ahmadzadeh Siyahrood, Doctoral Student at Georgia Tech | Graduate Research Assistant at AI-ALOE



Al ALOE Showcase – November 19, 2025, Georgia Tech

What is SAMI (Social Agent Mediated Interaction)?

SAMI is a conversational AI agent designed to help learners in online classes build and foster social connections. SAMI can be integrated in any conversational system (chat, forum, etc.).

SAMI Approach

- > Learners are asked to formulate and post a self-introduction at the beginning of the semester
- If they opt in, SAMI:
 - analyzes their post for match-making with other consenting learners
 - identifies the best matches between learners
 - suggests five peers as potential matches
- ➤ Learners can click on a match's name to be taken to their introduction post and to contact them

What is the Issue?

- > SAMI faces challenges that go far beyond those of other AI-ALOE technologies
 - It focuses on relations and social connections between people.
 - It touches on the core of being human: Being able to interact with other people without experiencing negative emotional stress.

Challenge 1

People are afraid of making themselves vulnerable

What will others do with the information that I provide about myself?

Challenge 2

Being afraid of being perceived as harassing people with different demographics

"I'm a lot older than [others]. I didn't necessarily want to be running around harassing random undergrads and saying, Hey, wanna be friends?"

Challenge 3

How to deal with a variety of different expectations?

- Depending on personal characteristics or personality, some people expect to make and build connections in person, while others are completely satisfied with online relations.
- Some people want to meet people who live close to them, but others want to be connected to people living farther away, so that they know someone if they move there.

Challenge 4

Increasing the feeling of social isolation instead of reducing it

- 1. Being left out of the match-making: In the public conversations in which SAMI is integrated, everyone can see that some learners do not have any contacts. People can be left out based on user error: They didn't opt in
- 2. Getting a bad match: A machine learning algorithm usually optimizes for the best overall fit for the entire class population. This can lead to 90% great matches and 10% that are just terrible. "Is that the right way to do it?"
- 3. A match doesn't respond when a learner contacts them or stops responding: "What if SAMI connects you with somebody and then you reach out and they don't respond?" What if "one of the parties just wants nothing to do with that connection anymore?"

Challenge 5

Paternalism: Should a social agent "be a dictator"?

- 1. What if a learner insists: "I don't want to talk to anybody outside of my race." How "do we encourage the pro-social version of it" without being "the dictators that say this is how it's supposed to go?"
- 2. How to react to user errors such as not opting in? "Do we respond to students and say, hey, You didn't opt in? Are you sure you, like, don't want to opt in? Because if SAMI does that to me, I'm opting out." "How much do we pester students about this? ... I don't know what the answer is there. ... I don't think we have a good answer on how to counteract user error."

General questions:

- 1. What is our understanding of the normative ideal of social interaction?
- 2. Should we impose this ideal on the users of a social agent or should we take a laissez-faire attitude and accept everything as it is?

Challenge 6

Should a social agent intervene on its own (autonomously)?

- A social AI agent "could alert a person if she/he is using harsher language than usual and ask whether she/he is all right or need to take a break."
- A "social fatigue indicator": If someone who is an introverted person begins to show signs of irritability at a party, the AI might suggest wrapping things up and going home.
- An AI "could serve as a trusted advisor, providing feedback in moments of social difficulty—for example, helping people decide what to do if someone suddenly stops talking to them."



The risk

Losing social skills or never acquiring them when ubiquitous AI support takes away opportunities to practice these skills.



Take a learner reflecting on what they perceived as a limitation of SAMI

"The one thing that I found is that it provided who we should reach out to, but it did not initiate the initial conversation. And I think that's a really big barrier for some people because I was really shy to even post in the Ed forum. I posted as anonymous a few times first, and it took me doing really bad on a project where I reached a low level to just post and make force myself to make friends. So I think getting rid of that barrier and having SAMI at least start the initial conversation will really help in the success of creating those relationships."



Reflection

Should we develop what the learner wants?
Should we teach them social skills and force them to practice them? (Paternalism)
Will democracy still be possible if more and more people live without social skills?