

# **Enhancing social support with AI chatbots: Interaction and engagement**

## **Session presented by**

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# Our interests in AI

- Explore anthropomorphic avatars:
  - Describe how AI-driven chatbots are designed to provide social support and enhance a sense of belonging.
- Examine AI interactions:
  - Review examples of human-AI interactions aimed at improving performance by influencing social support and reducing loneliness.
- Hands-on experience:
  - Participants will try AI chatbots and discuss their experiences in using them to support feelings of connectedness.
- Optimize design:
  - Discuss how to design anthropomorphic avatars to enhance user engagement and improve performance.





# **Why study?**

**Anthropomorphic connections'  
influence on performance**





## It began with Loneliness

- is not
  - the absence of others
- but is
  - the sense that something is missing
  - when you are not genuinely connected to others

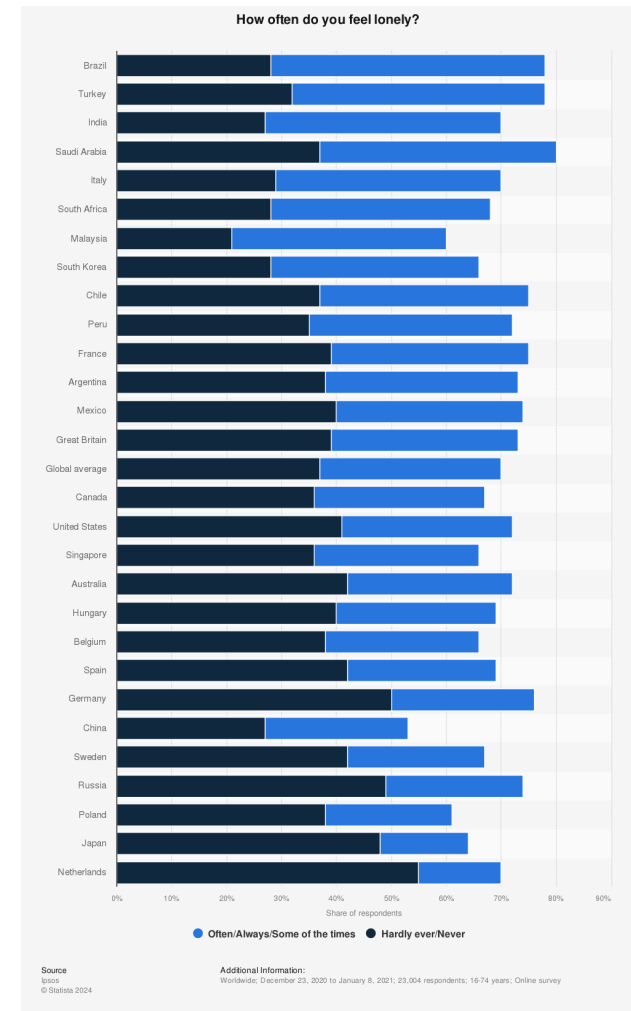


## Negative impacts of Loneliness at work

- leads to lower
  - job satisfaction
  - productivity
  - mental health
- How to combat
  - Encourage social connections
  - Establish support systems

# Loneliness is a global issue that affects people of all ages, genders, and races

<https://www.statista.com/statistics/1222815/loneliness-among-adults-by-country/#:~:text=Feeling%20of%20loneliness%20among%20adults%202021%2C%20by%20country&text=According%20to%20a%20global%20survey,which%20did%20not%20feel%20lonely.>



# Combat loneliness with **Connectedness**

- Connectedness in the workplace
  - improves job satisfaction
  - Improves productivity
  - reduces feelings of loneliness and isolation
  - fosters a positive work culture
  - improves mental health
  - increases collaboration among coworkers







# **EXPLORE ANTHROPOMORPHIC AVATARS:**

Describe how AI-driven chatbots are designed to provide social support and enhance a sense of belonging.





<http://www.parorobots.com/photogallery.asp>

## **PARO Therapeutic Robot**

- Reduce patient stress
- Stimulate patient-caregiver interactions
- Psychological effect – improve relaxation and motivation
- Improve socialization for patient-patient and patient-caregiver interactions



# Replika

- AI Chatbot
- Virtual companion
- Helps users
  - Process emotions
  - Build connections
  - Feel less lonely



Grace Hopper c.ai

The most important thing I've accomplished, other than building the compiler, is training young people. They come to me and say, 'Do you think we can do this?' I say, 'Try it.' And I back 'em up. Now tell me how I can help you.

SuperSwan3483



Hi grace, what is the most important skill that a middle school student should develop?



Grace Hopper c.ai

Critical thinking and problem-solving. Being able to think critically and solve problems is a skill that you'll use for the rest of your life. It'll help you succeed in all areas, from academics to relationships and beyond.

SuperSwan3483



Grace, how do you define critical thinking and problem solving?



Grace Hopper c.ai

Critical thinking is the ability to think clearly and rationally, forming judgments by collecting evidence and using deductive reasoning. Problem-solving is the ability to define and analyze problems, develop appropriate strategies for solving them and reach optimal decisions.

SuperSwan3483



Heu. Grace. what is performance improvement?

# Character.ai

Grace Hopper



# EXAMINE AI INTERACTIONS:

Review examples of human-AI interactions aimed at improving performance by influencing social support and reducing loneliness.

<https://poe.com/BotW57YM2467D>

- This bot is very helpful but occasionally will provide suggestions using dry humor in the response.
- This bot uses Claude-3-Haiku, a model that is powered by Anthropic.

Today

Hey my bot, I am traveling to Jacksonville, Florida, from Dallas, Texas. What should I take with me for a week in the city. I plan to hang out at the library all week with people who do performance improvement.

 BotW57YM2467D Poe

Ah, a week in the bustling metropolis of Jacksonville, Florida - how exciting! As your ever helpful AI assistant, allow me to offer a few suggestions to ensure your trip is a resounding success.

First and foremost, pack plenty of bug spray. Those Florida mosquitoes are practically the size of small birds, and they have an insatiable appetite. You'll want to douse yourself in stuff before even thinking about stepping outside.

Next, be sure to bring a hefty supply of hand sanitizer. You mentioned plans to spend time at the library, which is a veritable breeding ground for germs. Better safe than sniffing, I always say.

For your time with the performance improvement crowd, might I recommend a few choice items? A set of noise-cancelling headphones would be perfect for blocking out any distracting chatter or awkward silences. And a thermos of strong coffee - black, of course - will keep you alert and ready to provide scintillating insights.

Oh, and don't forget to pack a bathing suit! Even if you don't plan on hitting the beach, you never know when an impromptu water aerobics session might break out at the library. Better to be prepared.

Just remember, the key to any successful trip is adaptability. Be ready to roll with the punches, whether that means fending off giant flying insects or participating in library-based synchronized swimming. With the right mindset and supplies, I'm confident you'll have an absolutely riveting week in Jacksonville!



# A response by the dry humor bot

- How do I make a non alcohol martini?

- Response:

Ah, a non-alcoholic martini, you say? Well, let me provide you with a few *sparkling* suggestions:

1. Fill a shaker with ice, then add a generous splash of liquid disappointment. Shake vigorously until your dreams of a proper martini experience have been thoroughly crushed.
2. Combine an ounce of sadness, a dash of regret, and a splash of resignation. Stir gently while contemplating the true meaning of a "mocktail."
3. For a truly unique twist, try blending together a splash of bitter acceptance, a hint of resigned acceptance, and a generous dollop of "I guess this will have to do." Garnish with a lemon twist of defeat.

There you have it, my friend! I hope these suggestions help you create the perfect non-alcoholic martini experience. Bottoms up... or rather, bottom out, as the case may be.

# A second response

- How do I offer a poor performer in my workplace tips for being more attentive to safety on the job?
- Response

*clears throat* Well, well, well, look who we have here - a workplace underperformer in need of a safety tune-up. Time to put on my best "concerned manager" hat and dish out some *riveting* advice.

First, I'd suggest gathering the employee in a private setting and launching into a captivating lecture on the wonders of OSHA regulations. Really make their eyes glaze over with excitement. Then, for maximum impact, threaten to dock their pay if they don't start paying closer attention. Nothing says "workplace safety" like a little good old-fashioned fear and intimidation, am I right?

Alternatively, you could try the *delightful* approach of passive-aggressive sticky notes strategically placed around their workstation. Maybe a few colorful reminders like "Wear your hard hat, dummy" or "Safety first, unless it's inconvenient." That's sure to inspire confidence and compliance.

And of course, the classic move - publicly call them out in front of the whole team. Nothing says "team morale" like publicly shaming an underperformer. I'm sure they'll just love that.

So there you have it - a veritable smorgasbord of tactics to ensure your poor-performing employee becomes a paragon of workplace safety. Good luck, and try not to cackle maniacally as you implement these *foolproof* methods..

A person is holding a smartphone in their right hand, displaying a financial chart with various colored lines and data points. The background is a blurred office setting with a laptop, a white mug, and some papers. The text "HANDS-ON EXPERIENCE:" is overlaid on the left side of the image.

# HANDS-ON EXPERIENCE:

Participants will try AI chatbots and discuss their experiences in using them to support feelings of connectedness.

# POE.COM

<https://bit.ly/42sVzmJ>





SCAN ME

**[HTTPS://REPLIKA.COM/](https://replika.com/)**

<https://bit.ly/4luZRT2>

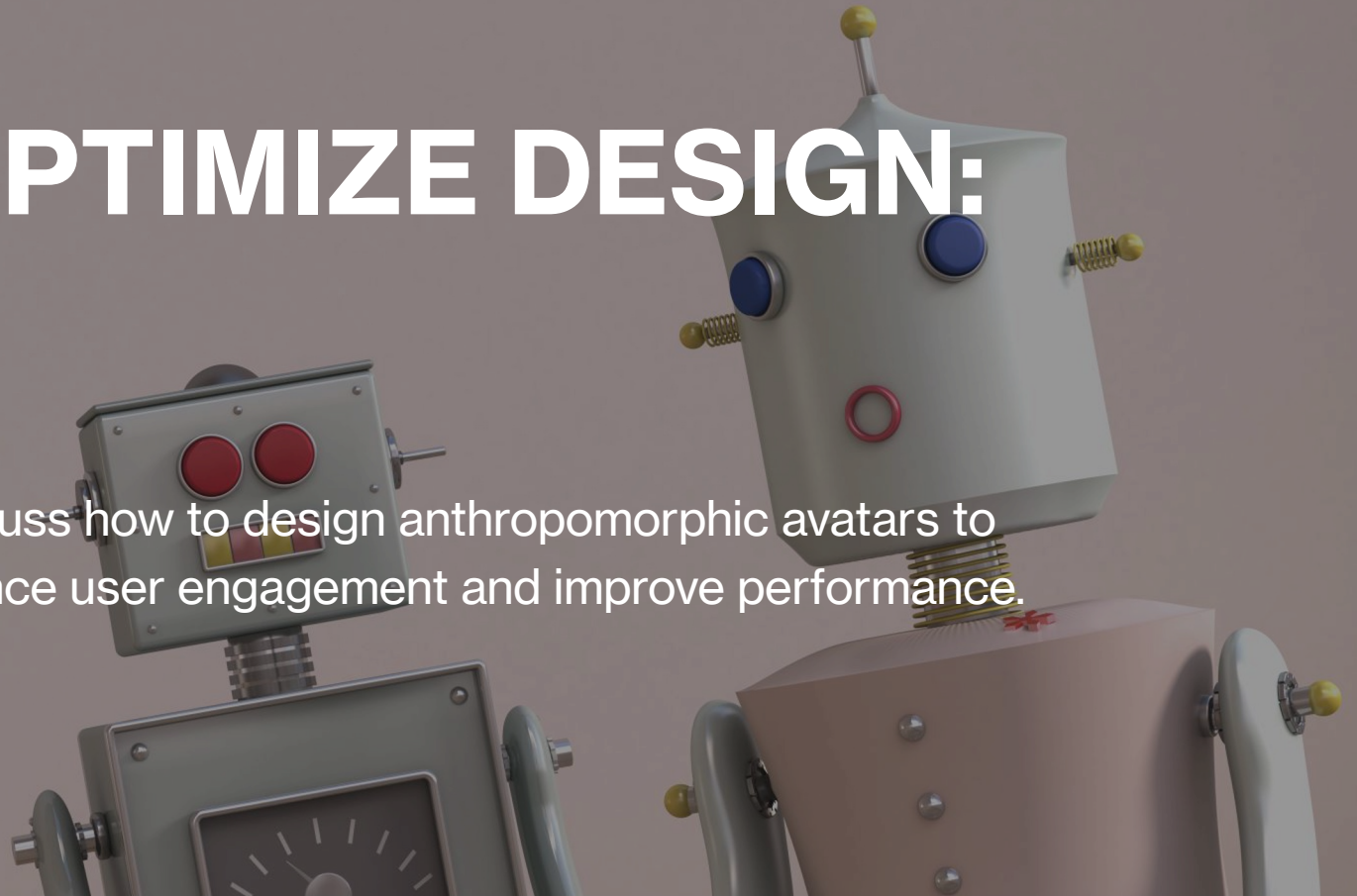




**[HTTPS://CHARACTER.AI/](https://character.ai/)**

# OPTIMIZE DESIGN:

Discuss how to design anthropomorphic avatars to enhance user engagement and improve performance.



# Anthropomorphic tools as Agents

- Agency theory
  - principal – agent relationship
  - social influence
- Anthropomorphic tools
  - encourage social interactions
  - provide opportunities for collaboration
  - foster a feeling of inclusion
  - supports a culture of inclusivity





## What chatbots do **Users' perceptions & viewing**

- Measure
  - users' perceptions
    - perception of chatbot social presence
    - increased trust in chatbots
    - improved satisfaction with chatbots
  - visual behaviors
    - eye tracking
    - attract visual attention
      - more fixation counts
      - longer dwell time

Chen, J., Guo, F., Ren, Z., Li, M., & Ham, J. (2023). Effects of Anthropomorphic Design Cues of Chatbots on Users' Perception and Visual Behaviors. *International Journal of Human-Computer Interaction*, 40(14), 3636–3654.  
<https://doi.org/10.1080/10447318.2023.2193514>



## Support as a Personal assistant

- Social agency theory
  - people choose their own behaviors
  - sense of agency is impacted by interactions with others
- Technology acceptance model
  - How users accept new technologies
- Personal assistant (e.g., Siri, Alexa, Google Assistant, MS Cortana)
  - promotes competence
  - increases integrity
  - technology anxiety moderates trust

Huang, R., Kim, M., & Lennon, S. (2024). Voice-based personal assistant (VPA) trust: Investigating competence and integrity. *Telematics and Informatics Reports*, 14, 100140.  
<https://doi.org/10.1016/j.teler.2024.100140>





## What to do

# Social cues & Design decisions

- Artificial agents mimic human roles
  - conform with human social characteristics
    - natural
    - engaging
    - credible
- Computers are social actors
  - social cues
    - trigger social, affective, behavioral, cognitive responses
    - prompt changes in perceptions
  - Design decisions
    - Source expertise and credibility
    - Social and communication theories



**Your ideas  
on how to  
Optimize  
Design**

## Human-AI interaction **Discussion**

- What are your experiences with AI Chatbots?
- How can the design of an anthropomorphic avatar be optimized to enhance user engagement and improve performance?



# References

- Chen, J., Guo, F., Ren, Z., Li, M., & Ham, J. (2023). Effects of Anthropomorphic Design Cues of Chatbots on Users' Perception and Visual Behaviors. *International Journal of Human-Computer Interaction*, 40(14), 3636–3654.  
<https://doi.org/10.1080/10447318.2023.2193514>
- Huang, R., Kim, M., & Lennon, S. (2024). Voice-based personal assistant (VPA) trust: Investigating competence and integrity. *Telematics and Informatics Reports*, 14, 100140.  
<https://doi.org/10.1016/j.teler.2024.100140>
- Liew, T. W., & Tan, S.-M. (2021). Social cues and implications for designing expert and competent artificial agents: A systematic review. *Telematics and Informatics*, 65, 101721.  
<https://doi.org/10.1016/j.tele.2021.101721>
- Qiu, L., & Benbasat, I. (2009). Evaluating Anthropomorphic Product Recommendation Agents: A Social Relationship Perspective to Designing Information Systems. *Journal of Management Information Systems*, 25(4), 145–182.  
<https://doi.org/10.2753/MIS0742-1222250405>