

Published by Inter Arts Center, Lund University

Text © The authors, 2024

Editorial: Hedvig Jalhed and Margot Edström



This text is licensed under an Attribution-NonCommercial-NoDerivatives 4.0 International License. This license allows users to download and share the article for non-commercial purposes, so long as the article is reproduced in the whole without changes, and the original authorship is acknowledged (See full terms and conditions here: <https://creativecommons.org/licenses/by-nc-nd/4.0/>)

DOI: <https://doi.org/10.37852/oblu.362.c890>

1, 2, 3 Playtime

ISBN:

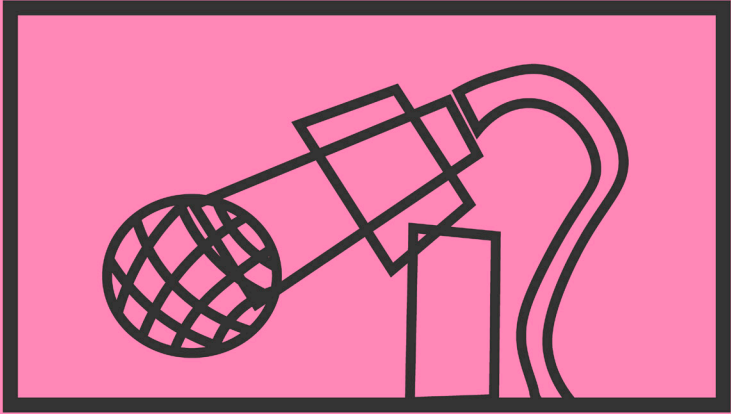
978-91-531-2612-6 (print)

978-91-531-2613-3 (digital)

Publications from Inter Arts Center, no 1

ISSN: 3035-7586

Suggested citation: Boulton, A., Sério, I.-A. & Lundberg, J.-N. 2024, 'Emotional Support Karaoke Bot', i M. Edström & H. Jalhed (red.), *1, 2, 3 Playtime*, Inter Arts Center, Malmö. <https://doi.org/10.37852/oblu.362.c890>



EMOTIONAL SUPPORT BOT KARAOKE

LVL 1. EASY-PEASY

Sing backstage while the bot takes the heat for you. No need to face your stage fright today! Hurray!

LVL 2.

PEEK-A-BOO

Ready for a challenge? Take on the signing nook where you almost step into the stage but not quite! We aren't feeling so brave yet.



LVL 3. SHOWTIME!

The bot has been taking all the heat for you and now you feel ready to be in the spotlight. You go superstar! Sing alongside EPI and take over the stage.

Emotional Support Karaoke Bot

Amy Boulton, Inês A. Sérgio, and Jon Nicklas Lundberg

The *Emotional Support Karaoke Bot* is a dialectic yet light-hearted approach to the potentials of care practices within the technological development of robotics. Through extending the functionality of the Epi robot – developed by Lund University Cognitive Science Robotics Group – by interfacing it through PureData and sound, we turned Epi into a supportive companion that helps people to overcome stage fright.

While the *Emotional support karaoke bot* was just a prototype, it was featured in an article by Lund University's student newspaper *Lundagård*.¹ This expression of interest motivated us to further develop the concept using elements of gamification in technologies. We introduced difficulty levels and created a stage design to accommodate each: Easy-Peasy (level 1); Peek-a-Boo (level 2); and Showtime! (level 3).

In the first level, Easy-Peasy, the participant can choose to be completely hidden while the humanoid bot mimes along to their voice in front of the crowd. Sound from the singer's mic acts as a data input that causes the bot's mouth to light up. Likewise, the input was customised so that sustaining a loud note causes the bot's eyes to glow red, and it would bob its head along to the music. If the participant feels a bit braver, they can progress to Peek-a-Boo, an intermediate level where the participant is almost hidden, only the head pokes out from behind the curtain. All this training leads to the ultimate level: Showtime! Here, the participant takes centre stage and sings alongside the emotional support karaoke bot, appearing as a duo.

The project's catalyst was the *1, 2, 3 Playtime* session at IAC 'Introduction to the use of the humanoid robot Epi in ongoing cognitive research' by

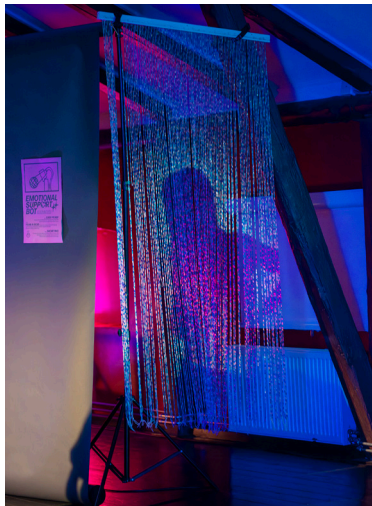
1 Lindberg, Erik. 'Forskare testar robot för att bota scenskräck', *Lundagård*, April 23, 2024. <https://www.lundagard.se/2024/04/23/forskare-testar-robot-for-att-bota-scenskrack/>.

Birger Johansson, Director of the Cognitive Robotics Lab at Lund University. In this talk and technical demonstration, we learned that the Epi bot was created for experiments in social robotics and brain modelling, with a particular focus on non-verbal communication such as gestures or eye movements. This presentation was complemented by Samantha Stedtler's talk² later in the week in which she introduced us to her research with Epi, measuring what kinds of variables affect the perceived social agency of the robot. This concept of 'social agency' includes likeability, trust/safety, animacy, intelligence, anthropomorphism and fluency.

Epi's humanoid design is quite loveable and childlike, with a disproportionately large head and eyes. These physical attributes worked well for our recasting of Epi as an 'emotional support' karaoke companion, as its likeable appearance signals to the audience/performers that it is trustworthy and friendly. The robot itself gains animacy and personality when it moves to the beat and appears to sing in a dramatic way, occasionally throwing its head back in the heat of the moment as if it is experiencing the emotions of the song.

We would like to thank Lund University Cognitive Science Robotics Group and the Inter Arts Center for creating the conditions for this project to take place and for the access to the Epi robot and its technical documentation. It was a fun project that invited both a playful approach to artistic practice as well as interdisciplinary approaches to art and cognitive science through the social setting of karaoke performance.

² Stedtler, Samantha, 'Navigating Nuances: Insights into Human-Robot Interaction Dynamics'. Lecture, Inter Arts Center, January 31, 2024. <https://www.iac.lu.se/video-documentation-1-2-3-playtime>.



Level 1: Easy-Peasy

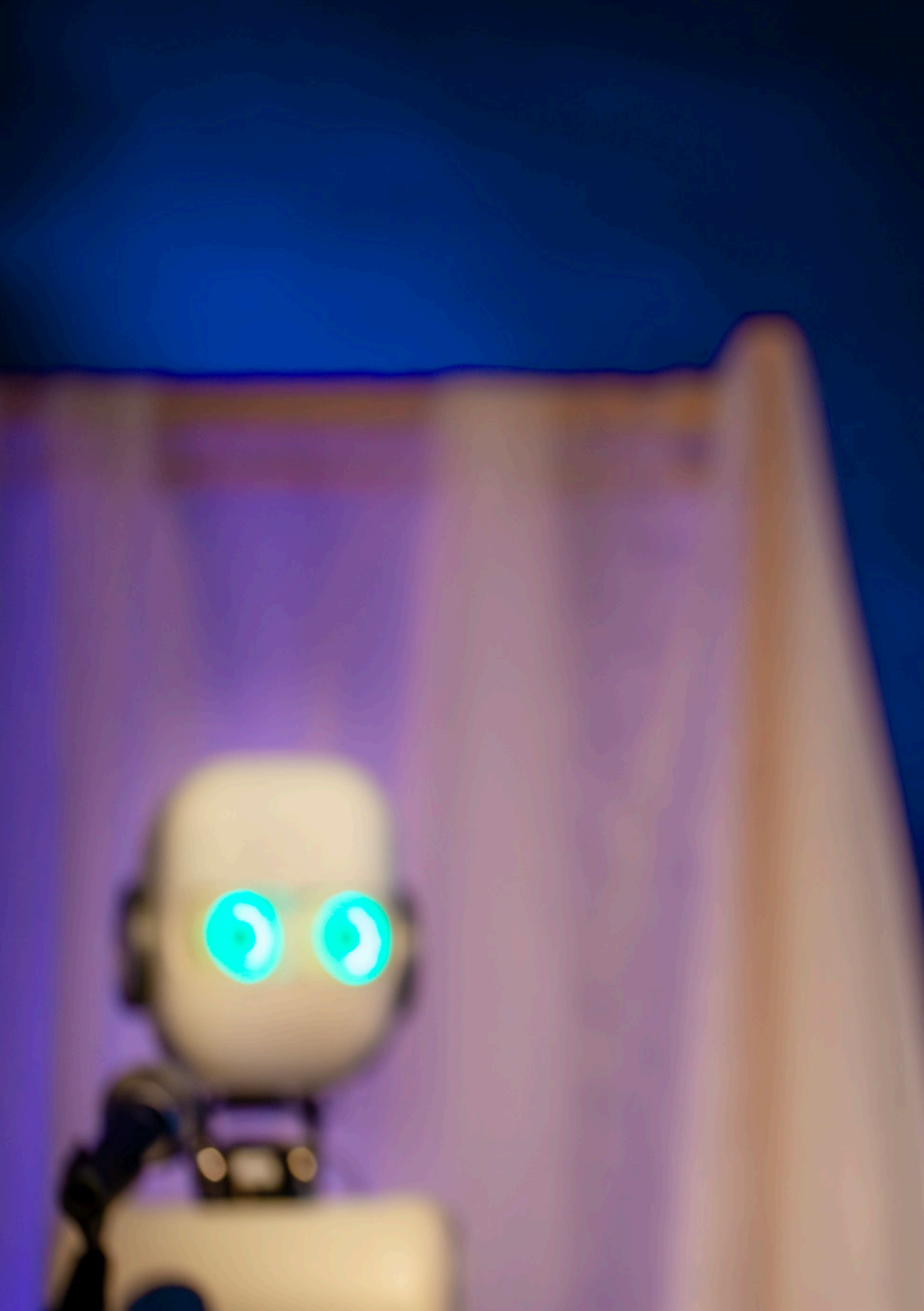


Level 2: Peek-a-boo



Level 3: Showtime!

Emotional Support Karaoke Bot, 2024. Installation views. *Malmö Gallery Weekend 2024*, IAC. Amy Boulton, Inês A. Sério, Jon Nicklas Lundberg





Emotional Support Karaoke Bot, 2024. Installation view. *Malmö Gallery Weekend 2024*, IAC. Amy Boulton, Inês A. Sério, Jon Nicklas Lundberg