Music, Technology, and Well-being in Singapore

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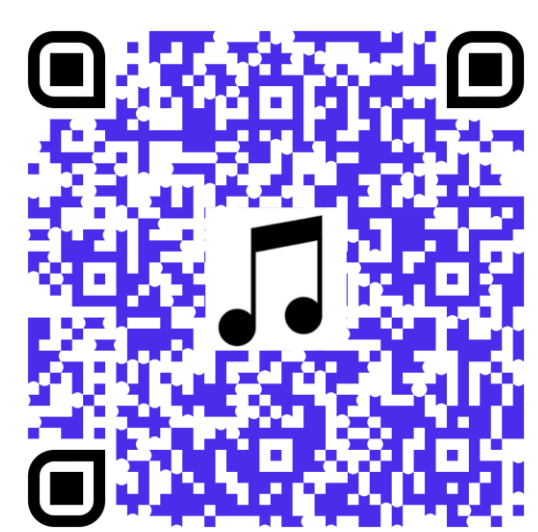katagres@nus.edu.sg

INTRODUCTION

- Music offers various affordances (e.g., emotion regulation) for therapeutic use in general and clinical populations
- With recent technological advances, Agres, Schaefer, Volk, et al (2021) provides a roadmap for future directions in developing exciting new music technologies for health and well-being (see below):

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Research Article

Music, Computing, and Health: A Roadmap for the Current and Future Roles of Music Technology for Health Care and Well-Being

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Music & Science

Abstract
The fields of music, health, and technology have seen significant interactions in recent years in developing music technology for health care and well-being. In an effort to strengthen the collaboration between the involved disciplines, the workshop "Music, Computing, and Health" was held to discuss best practices and state-of-the-art at the intersection of these areas with researchers from music psychology and neuroscience, music therapy, music information retrieval, music technology, medical technology (medtech), and robotics. Following the discussions at the workshop, this article provides an overview of the different methods of the involved disciplines and their potential contributions to developing music technology for health and well-being. Furthermore, the article summarizes the state of the art in music technology that can be applied in various health scenarios and provides a perspective on challenges and opportunities for developing music technology that (1) supports person-centered care and evidence-based treatments, and (2) contributes to developing standardized, large-scale research on music-based interventions in an interdisciplinary manner. The article provides a resource for those seeking to engage in interdisciplinary research using music-based computational methods to develop technology for health care, and aims to inspire future research directions by evaluating the state of the art with respect to the challenges facing each field.

- **Brief Overview of Agres, Schaefer, Volk, et al (2021):**
  A. Adopting an interdisciplinary approach (Fig. 1)
  B. Summarizing various uses of Music Technology (MusTech) in healthcare settings
  C. Offering best practices, challenges, and examples of interdisciplinary collaboration for developing MusTech for health
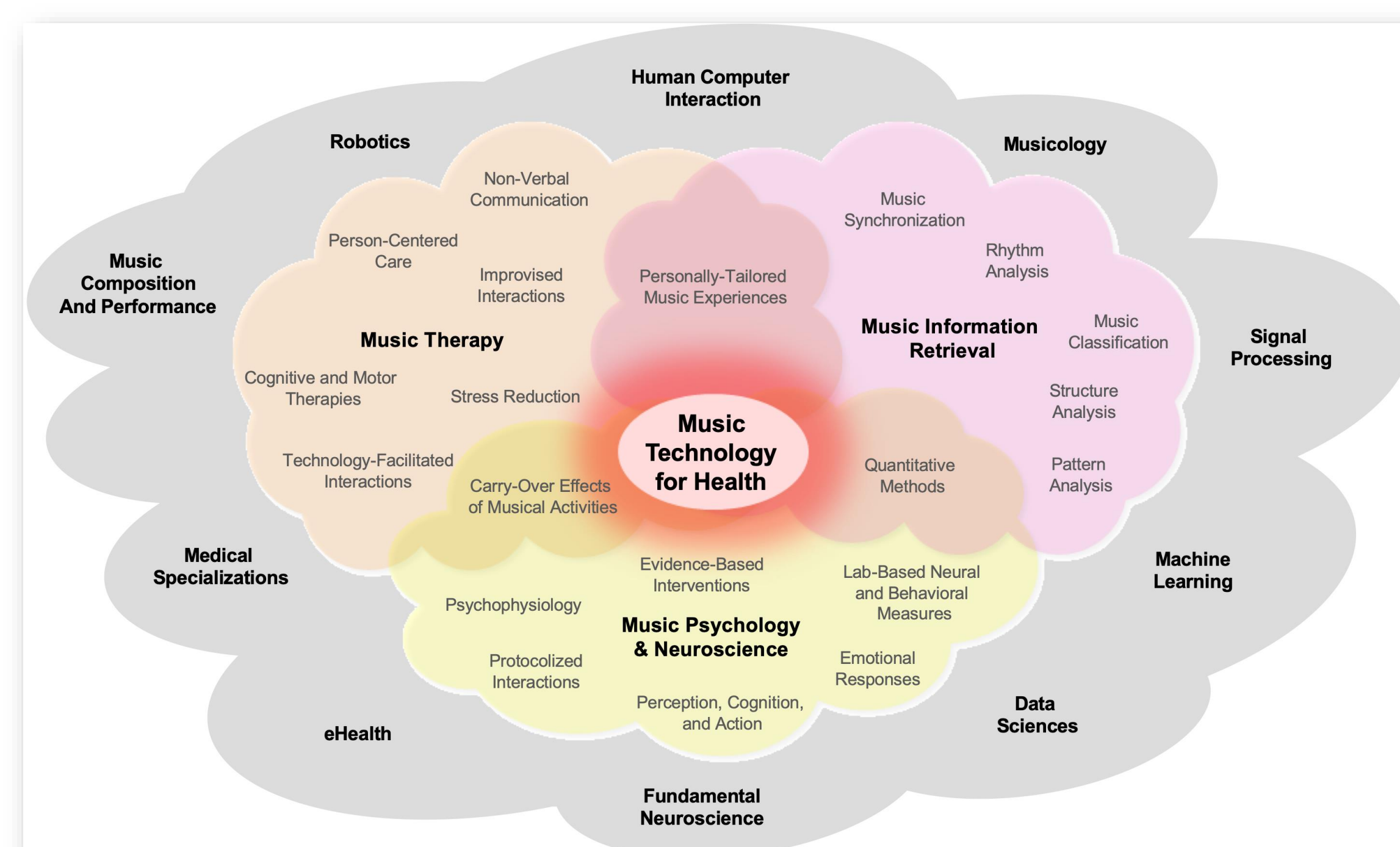

Fig. 1. Multidisciplinary space relevant for developing MusTech for health, *adapted from Agres, Schaefer, Volk, et al (2021).*

OPERATIONALIZING *ROADMAP* IN SINGAPORE

- Existing momentum in the use of music for promoting wellness and in the application of technology in social services (Fig. 2)

THE STRAITS TIMES   SINGAPORE

SG govt PCK vaccine education jam gets international attention

DARSHAN SHADRACH · 04 MAY 2021
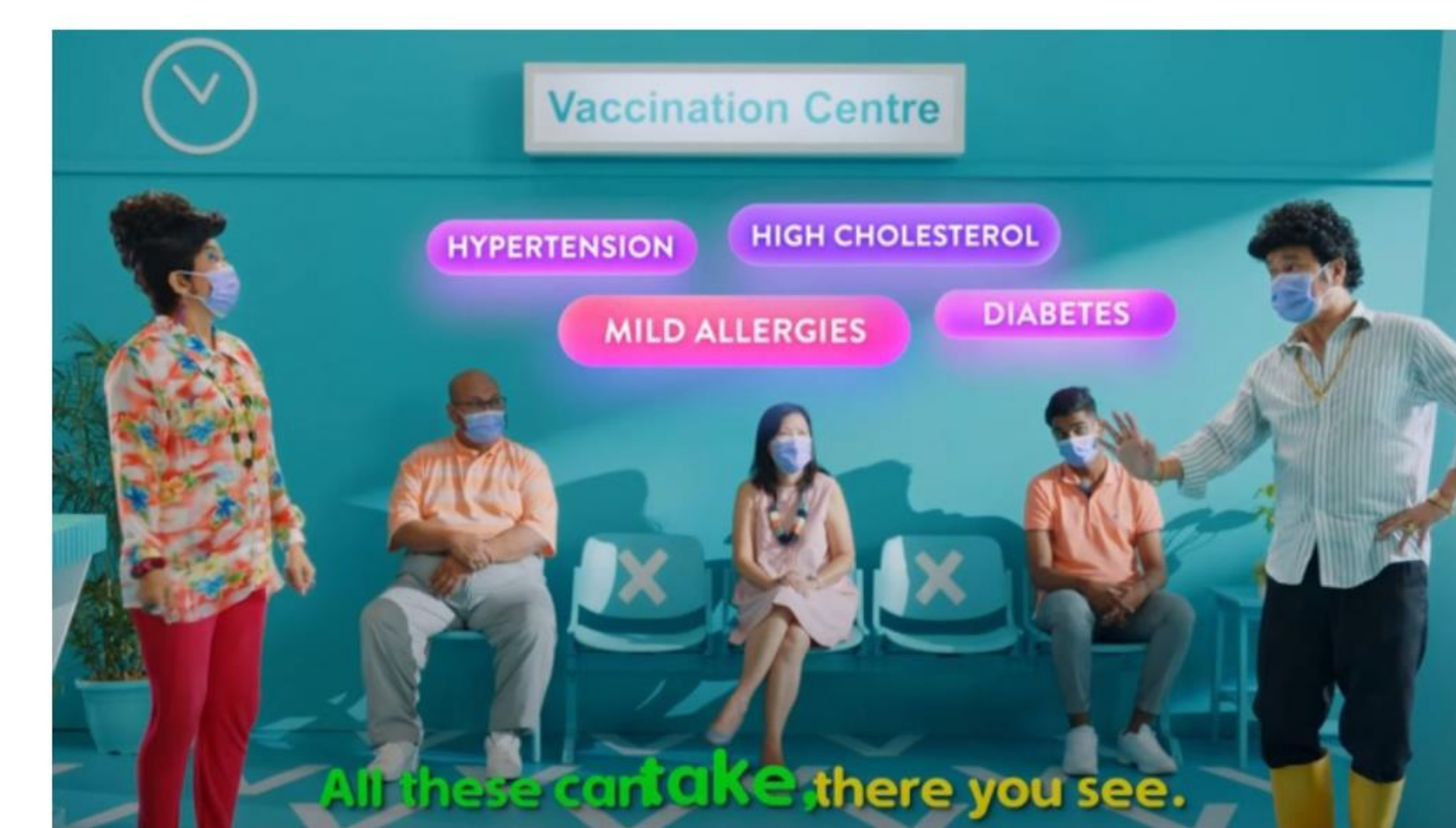
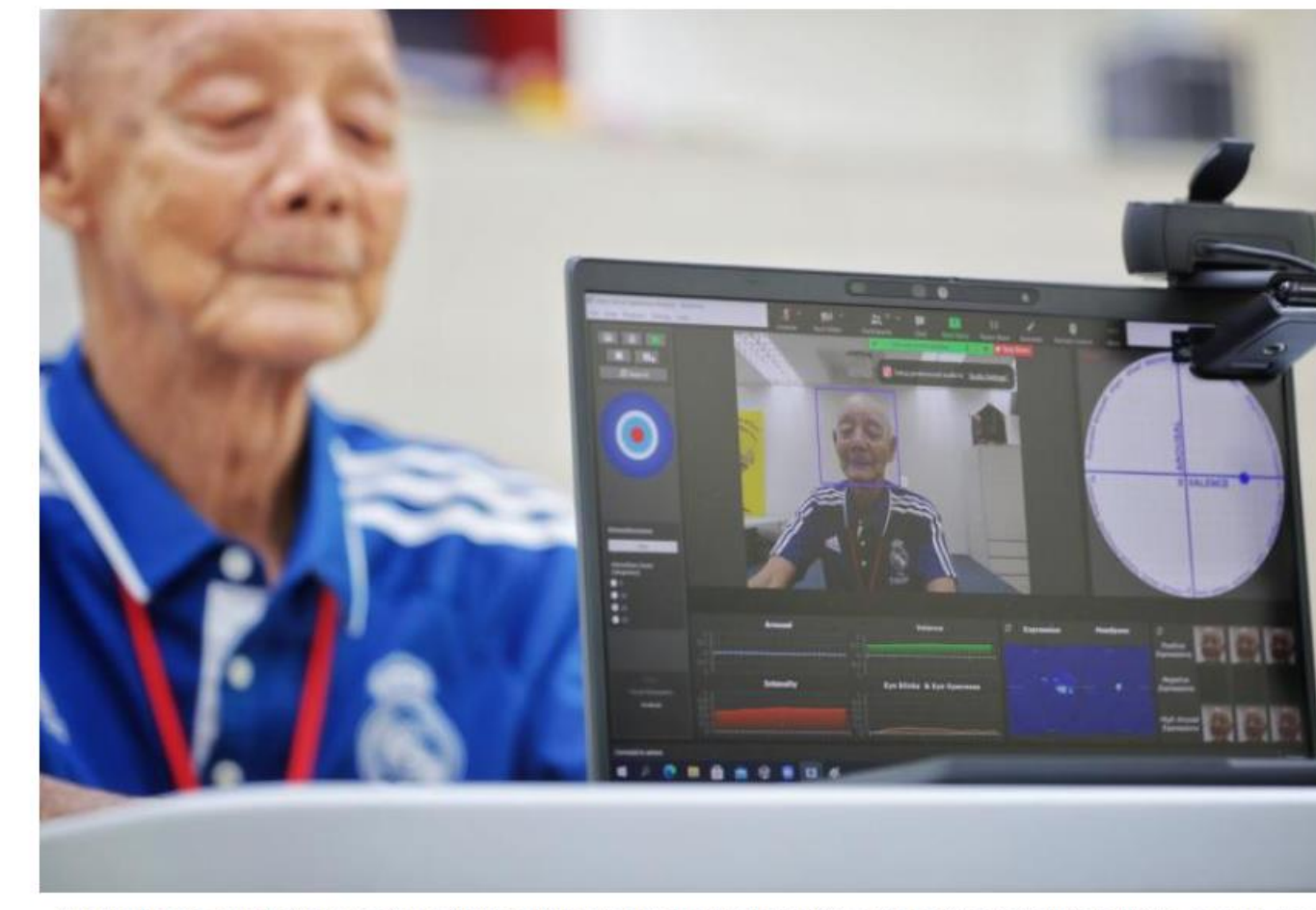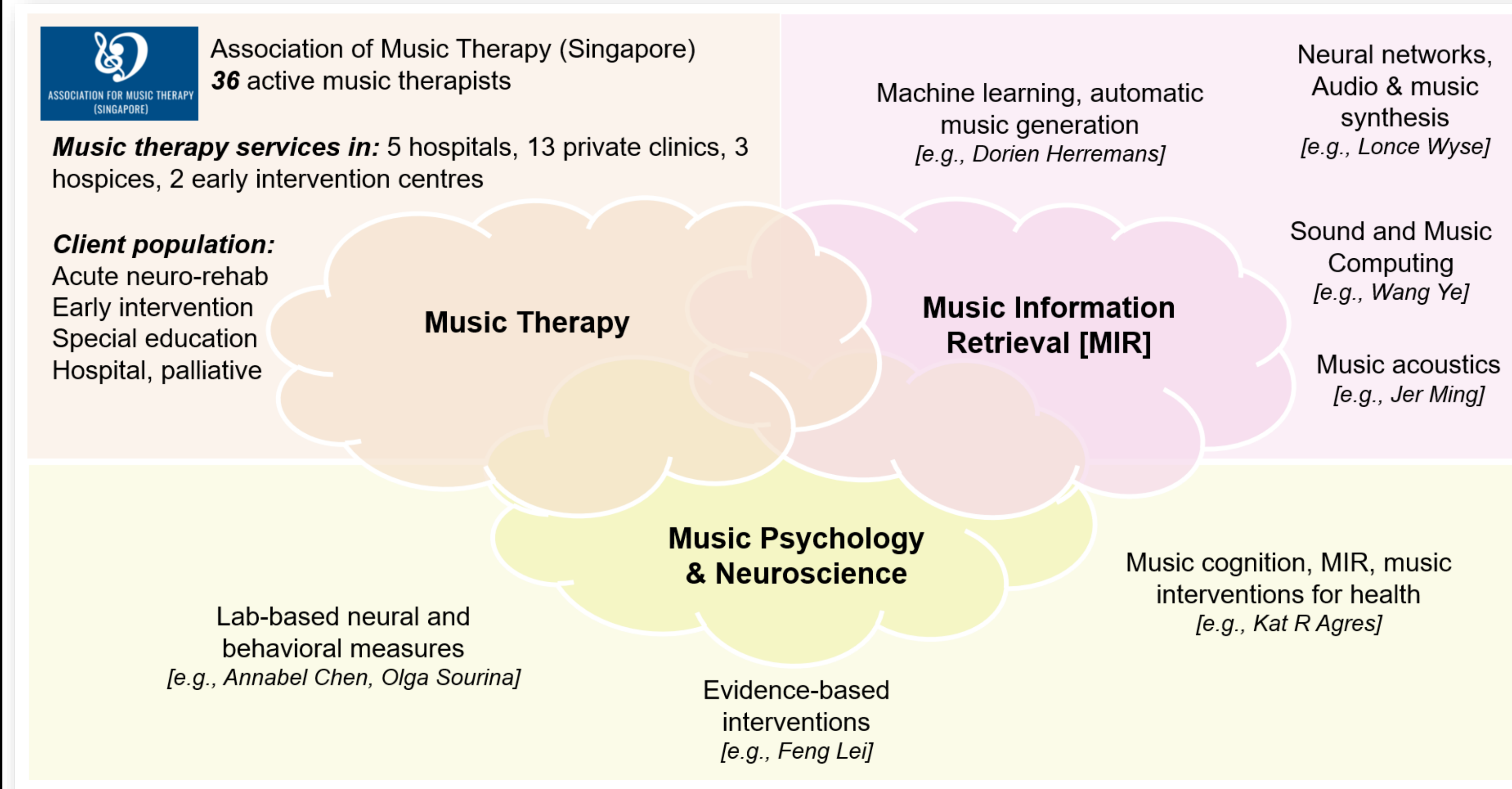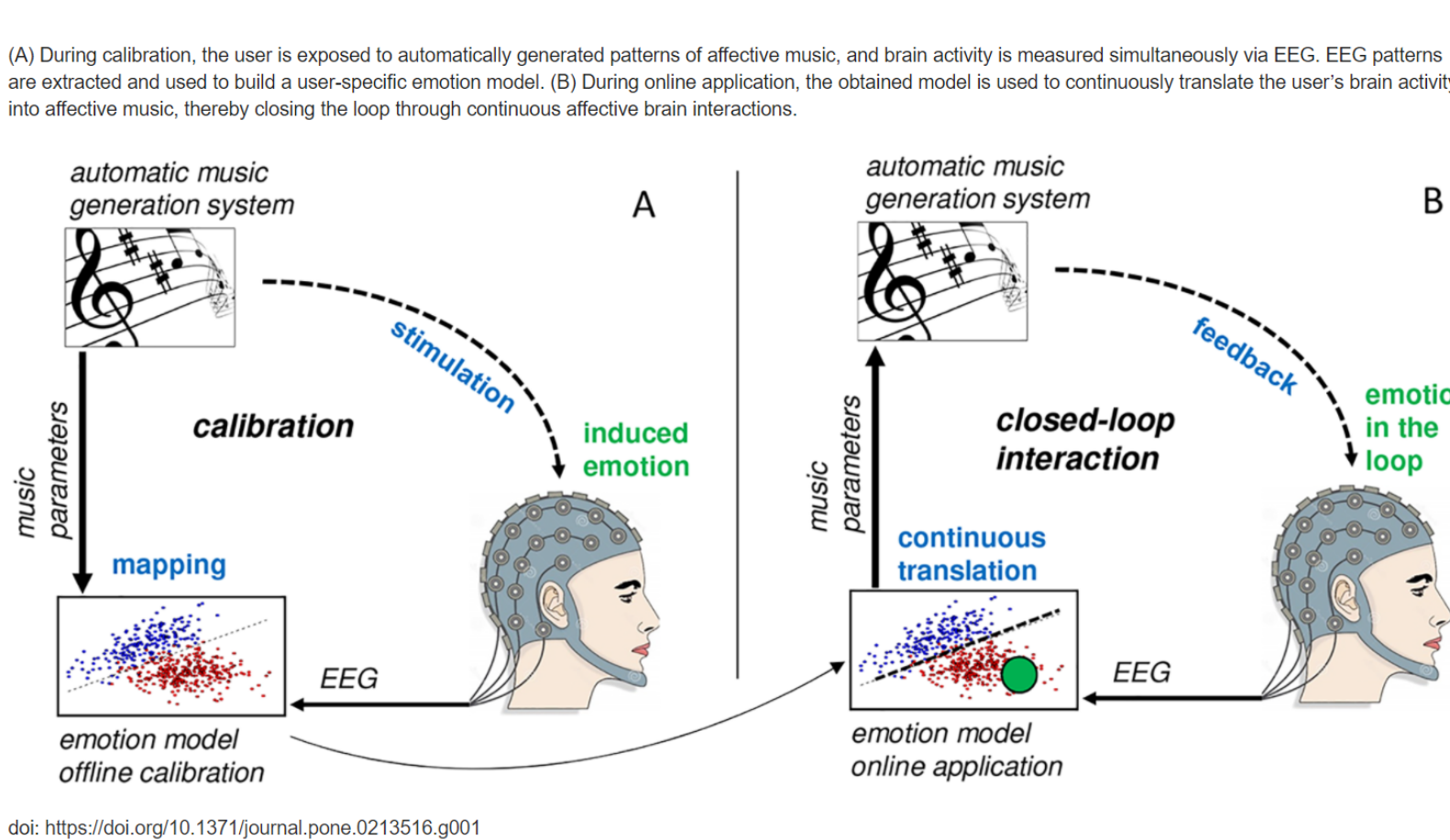New AI program could help screen seniors for depression and anxiety through video calls

Fig. 2. *Left.* Example of use of music for promoting wellness: Music videos created to promote vaccination[1]. *Right.* Example of application of technology in social services: Artificial intelligence (AI) program to help in screening of depression through video calls[2].

Interdisciplinary landscape in Singapore

Association of Music Therapy (Singapore)
36 active music therapists

Music therapy services in: 5 hospitals, 13 private clinics, 3 hospices, 2 early intervention centres

Client population:
Acute neuro-rehab
Early intervention
Special education
Hospital, palliative

Music Therapy

Music Information Retrieval [MIR]

Music Psychology & Neuroscience

Machine learning, automatic music generation
[e.g., Dorien Herremans]

Neural networks, Audio & music synthesis
[e.g., Lonce Wyse]

Sound and Music Computing
[e.g., Wang Ye]

Music acoustics
[e.g., Jer Ming]

Music cognition, MIR, music interventions for health
[e.g., Kat R Agres]

Lab-based neural and behavioral measures
[e.g., Annabel Chen, Olga Sourina]

Evidence-based interventions
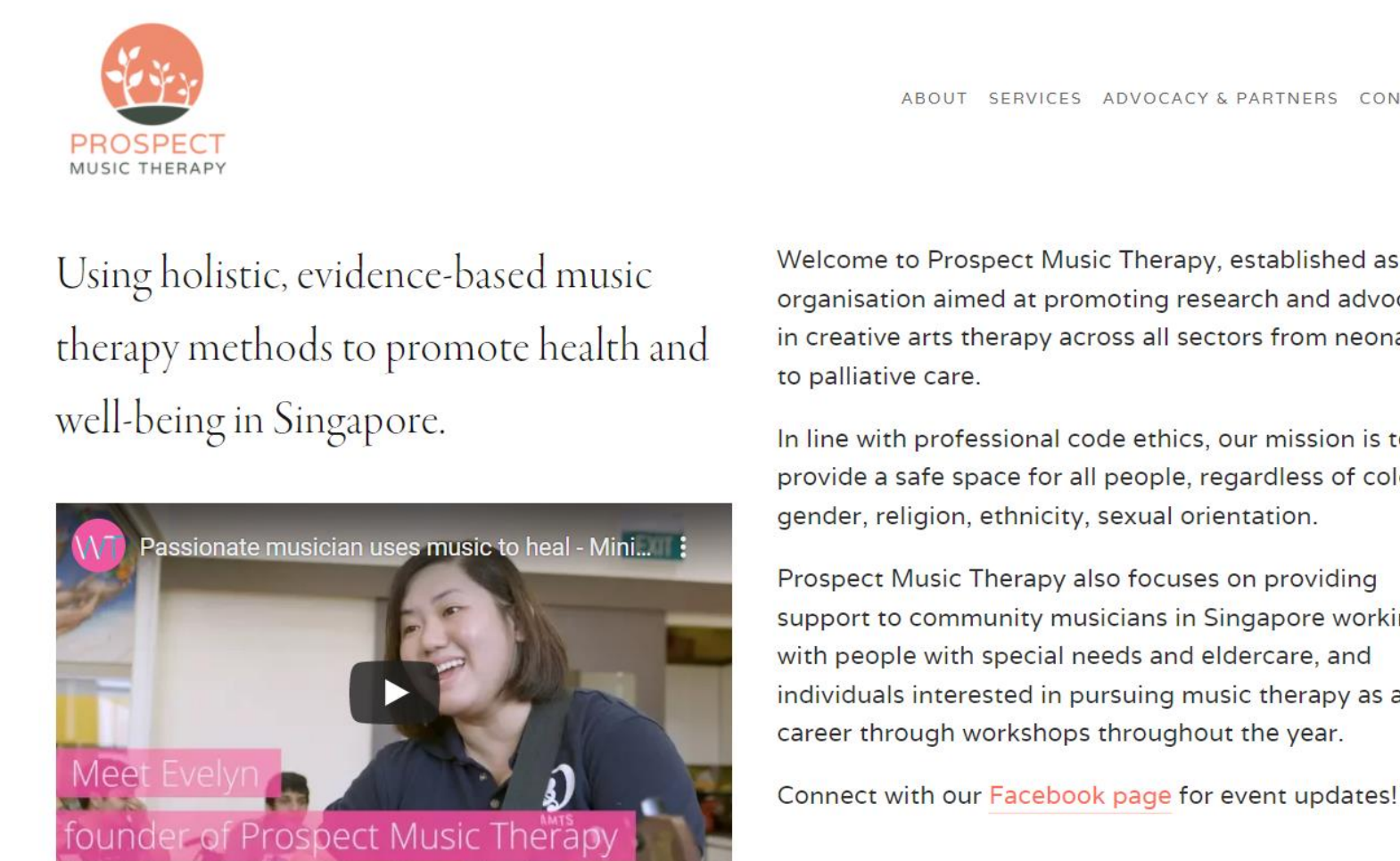*[e.g., Feng Lei]*

Various uses of Music Technology in healthcare settings in Singapore

- Affective music Brain Computer Interface (BCI)
- Home-based & online music therapy services

*Adapted from Ehrlich et al. (2019), PLoS One*

PROSPECT MUSIC THERAPY

ABOUT   SERVICES   ADVOCACY & PARTNERS   CONTACT

Using holistic, evidence-based music therapy methods to promote health and well-being in Singapore.

Welcome to Prospect Music Therapy, established as an organisation aimed at promoting research and advocacy in creative arts therapy across all sectors from neonatal to palliative care.

In line with professional code ethics, our mission is to provide a safe space for all people, regardless of color, gender, religion, ethnicity, sexual orientation.

Prospect Music Therapy also focuses on providing support to community musicians in Singapore working with people with special needs and eldercare, and individuals interested in pursuing music therapy as a career through workshops throughout the year.

Connect with our Facebook page for event updates!

Notes. Prospect Music Therapy[3] offers home-based & online Developmental music therapy, Neuro-rehabilitation

DISCUSSION

- There is a presence of use of music for health and wellness in Singapore, but the inclusion of *technology* in Music Medicine is just beginning, and would benefit from greater interdisciplinary interaction, and more opportunities for music therapy / music psychology education (Fig. 3A)
- Identified other relevant factors to consider (Fig. 3B)

A. Education & Interdisciplinary Research

- Need for increased dialogue among relevant disciplines
- Organize music-related symposiums, e.g.:

SMRS 2019
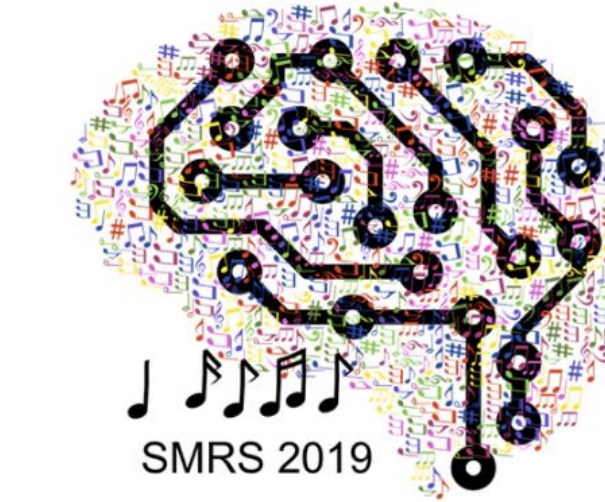
Notes. Singapore Music Research Symposium (SMRS)[4] was first held in 2018, subsequently in 2019 but paused due to Covid.

- Need for further education and training
- Continuing education[5], e.g.,:

SHORT COURSES
NEW! MUSIC & HEALTH

- Offer Music psychology modules at each of the major universities

B. Other relevant factors

- **Funding**
  - Identify possible sources
  - Alignment between funding agency and research topic

- **Demographics of society**
  - Useful to plan in terms of different age-groups
  - E.g., Singapore's aging population: resources are more likely to be devoted to developing interventions for older adults

Fig. 3. Operationalizing the roadmap in Singapore.

CONCLUSION

- Roadmap proposed by Agres, Schaefer, Volk, et al (2021) provides a platform to start thinking about current state of music research in one's country, and to consider how to move forward in one's country and more generally
- Other countries can adopt this roadmap to make more concrete plans of how to foster interdisciplinary collaborations (within/across institutions and fields), and select research topics

References
Agres, Schaefer, Volk et al. (2021). Music & Science, 4, 1-32.
Ehrlich et al. (2019). PLoS One, 14(3):e0213516

Footnotes
[1] Music video for vaccination. https://www.marketing-interactive.com/ministry-of-communication-and-information-launches-igotmyshotsg-campaign
[2] AI screening. https://www.straitstimes.com/singapore/community/new-ai-program-could-help-counsellors-accurately-screen-seniors-for-depression
[3] Prospect music therapy. http://www.prospectmusictherapy.com/
[4] SMRS. https://www.ystmusic.nus.edu.sg/event/singapore-music-research-symposium-2019/
[5] Lasalle music module. https://www.lasalle.edu.sg/continuing-education/short-courses/new-music-health