WISSENSCHAFT W&K KUNST

March 17, 2022
18h Salzburg (CET)
Lecture online
and in person

Participation free of charge

Mozarteum University
R 1002 in KunstQuartier
Bergstraße 12a/Paris-Lodron-Straße 2a,
Stiege 2, 1. OG, 5020 Salzburg

Webex Login Details:
https://globalpage-prod.webex.com/join
Meeting number (access code): 2734 662 6557
Meeting password: JPjmbgpg582

In English

Lecture Series

MUSIC & MATHEMATICS

Music and Cardiology:
What's Your Heart Got to Do with Music?

Elaine Chew
(CNRS, STMS Lab (Ircam), Paris, F)

EINE KOOPERATION VON

UNI MOZ ART SBG

PARIS LODRON UNIVERSITÄT SALZBURG

MUSIC & MATHEMATICS

Music and Cardiology: What's Your Heart Got to Do with Music?

Elaine Chew (CNRS, STMS Lab (Ircam), Paris, F)

Music and the heart have been closely intertwined in the romantic imagination. The pulsating heart pumps blood through the body, producing the rhythm of life. We shall explore the ways in which electrical impulses of the heart result in musical behaviors, and how mappings between heartbeats and music can inspire new ways to view music and heart rhythm disorders, mediated by mathematics. Music alters our physiological state. Our recent work focuses on making musicians' expressive devices visible, mathematically and graphically. We shall see how musicians' expressive choices lead to largely unconscious but quantifiable autonomic changes for both players and listeners. These changes can be observed in the heart rate, heart rate variability, respiration, and blood pressure or by pacemaker patients' activation recovery intervals (time between a heartbeat and when the heart can beat again). The illustrations will be accompanied by music and technology demonstrations.

Prof. Elaine Chew, PhD, is a pianist and operations researcher working on the mathematical and computational modelling of musical structures with applications to the modelling of music performance, music-heart-brain interactions, computational arrhythmia research, and AI music generation.

This series deals with the interdisciplinary approaches and perspectives between music and mathematics. The implementation and design is carried out together with international experts from the fields of mathematics, statistics, computer science, composition and music research and opens up insights into current research and developments in the border areas between the scientific fields.
This lecture is part of an interdisciplinary course in which invited speakers discuss topics in their respective fields of research.

Concept & Direction
Arne Bathke
(Statistician, Data Scientist, Head of Program Area (Inter)Mediation | Department Artificial Intelligence and Human Interfaces, University of Salzburg)

Katarzyna Grebosz-Haring
(Systematic Musicologist | Program Area (Inter)Mediation, Interuniversity Institution Science & Art | University Mozarteum Salzburg, University of Salzburg)

Martin Losert
(Music Educator, Head of Department Musikpädagogik, Head of Program Area (Inter)Mediation | University Mozarteum Salzburg)

In cooperation with
Department Artificial Intelligence and Human Interfaces, University of Salzburg | Eliette and Herbert von Karajan Institute

Registration is required for participation in presence:
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