Workshop: Audio in Advanced Digital Age?

Full Schedule

08:30-08:50 Doors open, coffee

08:50-09:00 WELCOME

09:00-09:30
Author: Claude Cellier
Affiliation: CEO & President, Merging Technologies, Geneva, Switzerland
Title: *"Anubis monitoring controller - show and tell"*
Abstract: Claude will give a short presentation about the new. long awaited and now shipping, **Anubis** monitoring controller developed for Pyramix DAW.
- Discussion

09:30-10:00
Author: Jerry Catanescu
Affiliation: Chief Technician, Schulich School of Music, Sound Recording Studios
Title: *"Building a High-Channel-Count Analogue Volume Control"*
Abstract: 3D and high-count multichannel audio systems, such as 22.2 Surround and Wavefield Synthesis, present the challenge of how to simultaneously control the volume of dozens of channels *in the analogue domain*, while preserving excellent audio quality and tight gain matching. A suitable commercial solution could not be identified, so one was designed and built in house by McGill Sound Recording technical staff. The design, target specifications, and the resulting measured performance will be presented during the talk. The control systems will be employed here in the new 3D control rooms.
- Discussion

10:00-10:30
Author: Denis Martin
Affiliation: PhD student and Instructor, Schulich School of Music, CIRMMT, McGill University
Title: *"Revisiting gain reduction: Quantifying dynamic range compression"*
Abstract: With the decades-long “loudness war”, the recent widespread adoption of loudness normalization, and research into how AI can be used in sound production, investigations into how to measure loudness and dynamic range have become increasingly important to the audio engineering community. This presentation will provide an overview and demonstration of recent algorithms developed by the author and other researchers that aim to quantify dynamic range compression.
- Discussion

10:30-11:00
Author: Diego Quiroz
Affiliation: PhD student and Instructor, Schulich School of Music, CIRMMT, McGill University

Title: *"A Mid-Air Gestural Controller for the Pyramix® 3D panner"*
Abstract: Input devices that operate in three-dimensions and six-degrees-of-freedom (6DOF) have been evolving over the past several decades, and much research has been done on the subject of capturing the gestures of performers in an effort to re-map them to digital instruments, but not much for 3D audio. The practice of 3D audio mixing and spatialization is no different from a musical performance in this respect. The gestures used by engineers are expressive and have complex metaphorical significance. The purpose of this project includes developing a 6DOF gestural control utilising the Leap Motion® controller for the Digital Workstation Pyramix®, which will work as a MIDI layover gestural control system to be used as a multi-dimensional controller and automation recorder.
- Discussion

11:00-11:30 INTERMISSION

11:30-12:00
Authors: Jordan Strum, Richard King, Oles Protsidym, and Jerry Catanescu
Affiliation: ProStudioMasters Inc., Montreal, QC
Title: *"Simultaneous audio capture at multiple sample rates and formats for direct comparison and evaluation"*
Abstract: In order to evaluate differences among recording formats and resolutions over a variety of classical, jazz, and popular musical material, a unique collection of audio assets was recorded. Live performances were captured using a single pair of microphones, positionally adjusted for each sound source. Preamplifier outputs were routed to 11 identical recording interfaces capturing various PCM and DSD formats simultaneously with 3 analogue tape recorders, the contents of which were then transferred to the above digital formats. These assets will be used to compare differences among recording formats and resolutions using identical performances, and to provide source material for listening tests as well as further research. The design and execution of this project will be discussed.

12:00-12:30
Author: Gianluca Grazioli
Affiliation: PhD student in Sound Recording and co-founder of AuralTech
Title: *"ArcheoEchi: an example of the usage of immersive technologies in the cultural heritage in Southern Italy"*
Abstract: ArcheoEchi is a virtual experience of the remains of a medieval church discovered on the hills of Montecorvino (FG) in Southern Italy. It wants to be an example of how virtual reality and virtual acoustics can be applied to enhance the offer of cultural heritage and increase the attraction from general audience using the latest immersive technologies. ArcheoEchi is a project developed by the Italian start-up AuralTech, a team composed by the presenter Gianluca Grazioli and two archaeologists, in collaboration with the Department of Humanities of the University of Foggia and the AudioLab of the University of York.

12:30-13:00

Authors: Wieslaw Woszczyk and Dave H. Benson

Affiliation: Schulich School of Music, CIRMMT, McGill University

Title: *"Development of McGill Library of Virtual Rooms"*

Abstract: A large room impulse response library is being developed at McGill University that consists of more than 10,000 individual IRs captured using multichannel microphone techniques in a large variety of acoustic spaces. The challenge is to maximize the learning value of this resource by optimizing the way the library can be experienced. To accomplish this a search interface is developed for the library that uses audio signal features, and statistical and analytical treatment, to add rich metadata describing perceptual qualities, acoustical parameters, and physical characteristics, as well as tools for production.

- Discussion

13:00 Closing remarks and thanks

Note:

15 minute presentations will be followed by 10 min question/comment period, followed by 5 min for presenter changeover (and attendee bathroom visit, acquisition of fresh coffee, or snack, etc.)