

# May 23, 2023 - TC-MLAI Meeting Minutes

**Chairs in attendance:** Brecht De Man, Christian Uhle, Gordon Wichern

**Other attendees:**

- Flavio Everardo
- Jean-Marc Jot
- Christian Steinmetz
- Keith McElveen
- Shahan Nercessian
- Teri Grossheim
- Nyssim Lefford
- Rafael Kassier
- Robert Werner
- Emilia Stefanowska
- Brent Harshbarger

+ Others (sorry if we missed your name)

**Agenda**

- Welcome and Introduction
- Review of past events
  - AES Finland AI material - any comments/reviews from attendees
  - Update from Working Group on Challenges and New Directions
- Follow-up on proposals for upcoming AES NY
  - Revisit list of past proposals
  - Any new additions?
  - Prioritize and assign action items
- Discussion on the current hype cycle regarding generative AI
  - What role should our TC play?
  - Should we consider a webinar or convention proposal on this?
- Open Discussion

**Notes**

- **Review of past events**
  - At the just completed AES convention in Espoo, Finland, Brecht compiled a list of eight ML-related papers along with the convention keynote by Douglas Castro titled “The Future of Audio Production with AI.” Shahan, Christian Steinmetz, and Emilia all authored papers, and noted general excitement regarding ML for

audio. The keynote received positive reviews, especially related to embedded/on-device algorithms.

- Update from Working Group on Challenges and New Directions
  - Presented list of challenges to the full committee
    - Human related challenges (ethics, trustworthiness, explainability)
    - Processing/Technical challenges (robustness, high sampling rate, long temporal context, latency, artifacts, and accessibility)
  - Solicited feedback from the committee on the question: *What is the role of traditional DSP in a world where AI/ML algorithms dominate?*
  - General comments from the committee on audio-specific AI challenges:
    - training data (rights, ethics, biases)
    - design of user interfaces (or lack of it)
    - deep fake, e.g. in forensics
    - Will AI take our jobs (tonmeisters, engineers)
    - How can AI be applied in education
      - Should we consider a separate pedagogical challenge section
    - Sim2real is a challenge, i.e., typically we train ML models using simulation (e.g., propagation models, mixing models), and it may be difficult to translate performance to real data.
    - Storing and organizing training data and metadata.
    - The similarity between adaptive filtering (e.g., LMS, RLS algorithms) and machine learning
- **Proposals for the upcoming NYC convention**
  - Brecht, Christian Steinmetz and others are planning a workshop on deep learning for automatic mixing. The committee supports this plan.
  - We plan to propose a workshop sharing some of the outcomes from the working group on “Challenges and New Directions in Audio AI Applications”
  - We discussed the idea of a “townhall” style event to gather feedback on core principles on the use of AI technologies in audio engineering
- **Action items/follow-up**
  - We will experiment with a Discord server setup by Rafael
  - Brecht reached out to the general and paper chairs of the 155<sup>th</sup> convention in NYC later this year. They note that typically the ML/AI papers are not enough in number to warrant a separate track, so they are commonly grouped with audio signal processing. That said, if there are enough of them this could change. They also note that the program will be focussed and not as extensive as previous, four-day conventions. So let's get a large number of papers and a small number of obviously high quality workshops/tutorials together!
  - Nyssim submitted a townhall proposal on AI in audio engineering
  - Gordon submitted the Challenges and New Directions workshop proposal

- Jan Skoglund submitted a workshop proposal on AI for audio coding, co-sponsored by the TC on the coding of audio signals