



Bruce Devlin

AI and ML

SMPTTE and the Entertainment Technology Center [(ETC) etceter.org] have a long history of working together. One major success is the Interoperable Mastering Format (IMF) and another project that we hope will bear similar success is the Joint ETC Task Force on artificial intelligence (AI) and media. We know that the use of machine learning (ML) techniques in the media space will have an impact. Some of these will be beneficial, such as improved metadata collection and inference, and some will have a negative effect, such as the ability to create the so-called *deep fakes* that cannot be easily distinguished from genuine material. Other issues will be more difficult to address, particularly the problem of embedded bias in training sets. To understand this, it is worth knowing a little about how ML algorithms work.


The majority of algorithms try to establish a degree of confidence between some incoming data (e.g., an image) and a training set (e.g., thousands of existing preclassified images). When the goal of the algorithm is to distinguish a dog from a horse, it is important that the training set contains images of both dogs and horses. In fact, it is probably

important that the training set contains images of a variety of animals and shapes and random objects that you might take pictures of. This seems obvious.

Now let us take a different use case. Imagine that you are trying to recruit a new director of marketing. The head-hunting firm has trained its AI/ML resume filter algorithm based on its 30-year history of resumés received and on the people that were placed as directors of marketing. You do not have to be a rocket scientist (or a media engineer) to realize that this training data is almost certainly skewed toward white middle-class males who have traditionally played that kind of role in the past. This is despite recent studies that have shown that a more inclusive and diverse workforce leads to more successful companies. These invisible biases are a threat to the success of using AI and ML in the media space and this is one of the issues that the task force is considering in its work. If you are interested in the dangers of AI bias, especially on gender issues and the voice bias inherent in digital

assistants, then I recommend listening to the TED Talk (ted.com) from Kriti Sharma who is an expert in this field.

The aim of the ETC and SMPTE Joint Task Force is to identify key questions that need to be explored in detail to make AI and ML productive in media. From ethics to Application Planning Interfaces (APIs), all questions will be considered and prioritized. For a status report directly from the Task Force, visit the SMPTE website at <https://www.smppte.org/webcast/standards-april-task-force-updates> where a progress report was given by Yves Bergquist and Fred Walls who leads the group.

Links to our quarterly standards meetings and update webcasts, which feature guest appearances from experts who help influence SMPTE standards, are also on the website. You can attend your first SMPTE standards meeting free of cost by filling in a guest participation form that you will find in the governance section of the website. We look forward to seeing you (virtually) in 2021. 

2021 TECHNOLOGY COMMITTEE MEETINGS

7–10 June 2021 Virtual

17–20 August or 14–17 September 2021 Virtual (TBD)

6–9 December 2021 Virtual

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