ISM Annotated Bibliography #3

Thomas Ray

Independent Study Mentorship

October 2, 2022

Lin, D. C.-E., & Germanidis, A. (n.d.). *Soundify: Matching sound effects to video*. Retrieved

October 2, 2022, from https://chuanenlin.com/papers/soundify-neurips2021.pdf

The authors of the research paper identified that the process of adding sound effects to

video is extremely tedious and time-consuming and identified 3 bottlenecks: (1) finding

suitable sounds, (2) precisely aligning sounds to video, and (3) tuning parameters such as

pan and gain frame-by-frame. To combat this problem the researchers developed

Soundify, a program that matches sound effects to video. To create Soundify the

researchers utilized Pytorch Decord, OpenCV, NumPy, and SciPy for image processing

and Pydub for audio processing. The first step of the program was to classify which

objects in a video would make noise. The next step was to synchronize the sound effects

to when the object appears in the video. Finally, Soundify adjusts the sound according to

what is occurring in the scene. For example, if an airplane is coming closer to you the

sound gets louder.

Merkx, C., & Nawijn, J. (2021). Virtual reality tourism experiences: Addiction and isolation.

Tourism Management, *87*, 104394. https://doi.org/10.1016/j.tourman.2021.104394

The paper looks into 2 neglected themes the researchers have noticed in virtual reality

tourism experiences. Even though much of the research into virtual reality tourism has

focused on the positive aspects evidence of a temporary sense of isolation and the

addictive nature of virtual reality has been found. To find this information the researchers

looked at online reviews and blogs of tourists about their VR tourism experiences. The

tourism experiences captured a wide range of activities from trips to Mars to theme park rides. The researchers urge further research into the potentially harmful effects.

Mor, N., Wolf, L., Polyak, A., & Taigman, Y. (n.d.). *A Universal Music Translation Network*. Retrieved October 3, 2022, from https://arxiv.org/pdf/1805.07848.pdf

The authors of the research paper look at the possibilities of producing high-fidelity musical translation between instruments, styles, and genres. For example, they looked at the possibility of converting a Mozart symphony to audio in the style of a pianist playing Beethoven. Our capability is based on the recent development of techniques that convert across domains unsupervised, as well as the capacity to synthesize high-quality audio utilizing auto-regressive models. The ability to synthesize high-quality audio is essential to creating realistic audio while the autoregressive models are efficiently trained as decoders. The method to convert across domains unsupervised is useful because it gets rid of the requirement for a parallel dataset of different musical instruments.

Shan, P., & Sun, W. (2021, March 31). *Research on landscape design system based on 3D virtual reality and Image Processing Technology*. Ecological Informatics. Retrieved October 2, 2022, from https://www.sciencedirect.com/science/article/abs/pii/S1574954121000789

Simulating the planning effect is extremely important from a practical standpoint in order to assure the logic of landscape design. A novel landscape planning impact simulation system based on virtual reality technology was created to address the issues of two classic landscape planning effect simulation systems. The user layer, application layer, and display layer make up the system's overall framework. Hardware such as acquisition, main control, output, and display devices are chosen in accordance with the system frame

structure, and the system software is created in accordance with the system framework structure to execute the primary program. Additionally, the landscape design method used in this work is based on 3D image processing technologies. A 3D landscape picture can be preprocessed throughout the design process to eliminate noise and redundant information, and a 3D landscape image feature enhancement technique is then used to actualize 3D landscape image feature enhancement and increase the clarity of the landscape design image.

Sterling Alic, Dorottya Demszky, Zid Mancenido, Jing Liu, Heather Hill, and Dan Jurafsky. 2022. Computationally Identifying Funneling and Focusing Questions in Classroom Discourse. In Proceedings of the 17th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2022), pages 224–233, Seattle, Washington. Association for Computational Linguistics.

The authors of the paper looked at how many teachers utilize responsive teaching to try to funnel students towards an answer or focus students to reflect on their own thinking. Teachers are able to use students' collective thinking to push them towards solving a problem on their own and this has been found to boost confidence. The researchers want to replicate this strategy by computationally detecting funneling and focusing questions in classroom discourse. To make this happen the researchers created a data set of 2,348 teacher utterances and labeled them each as either funneling or focusing questions. Once the data was collected the researchers experimented with multiple models and found a supervised RoBERTa model to be the best. They found that the model had a strong linear association with positive educational outcomes.