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Advances in Automatic Meeting Minute Generation: A Survey

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Abstract: We faced the largest crisis of the twenty-first century at the start of 2020: the COVID-19 pandemic. In the midst of the turmoil, the generation ultimately found a method to get the job done by using automation in many aspects of life. Following the epidemic, we saw an 87% increase in video conferencing technologies for daily communications. Almost everything, from online gatherings to college lectures to business meetings, was housed on the internet, which, because it was virtual, increased the odds of ineffective interactions. In reality, statistics collected from employees across all domains reveal that people frequently miss essential points since taking minutes of meetings is a time-consuming, distracting, and extremely dull chore, and that over 37 billion dollars is squandered on ineffective meetings. Keeping track of significant decisions and agreements that were reached at a meeting requires the use of meeting minutes. The issues addressed and the choices made must be recorded in order to be reviewed at the start of the following meeting and for future reference. Many businesses retain salaried personnel to take minutes of meetings, using up valuable time and resources. We provide a method to enable staff members to have productive conversations that will increase a company's productivity by making greater use of the tools and technical improvements that are now accessible. Our approach extracts crucial information from significant debates using Deep Learning methods. The suggestion is for an automated method to record minutes and transcripts of a meeting with the benefit of speaker identification. The model we suggest will be able to recognise the speaker using Mel Frequency Cepstral Coefficient (MFCC)[12], convert an audio file into plain text using Deep Neural Networks (DNN), and summarise the meeting transcript into condensed minutes with the aid of Transformers.

Keywords: Automatic Meeting Minute Generation.

REFERENCES

- [1]. Virender Dehru, Pradeep Kumar Tiwari, Gaurav Aggarwal, Bhavya Joshi and Pawan Kartik "Text Summarization Techniques and Applications", IOP Conference Series: Materials Science and Engineering, 2021
- [2]. Y. Xie, L. Le, Y. Zhou, and V. V. Raghavan, "Deep learning for natural language processing," in Handbook of Statistics. Amsterdam, The Netherlands: Elsevier, 2018.
- [3]. H. Singh and A. K. Bathla, "A survey on speech recognition," Int. J. Adv. Res. Comput. Eng. Technol., no. 2, no. 6, pp. 2186–2189, 2013.
- [4]. M. A. Anusuya and S. K. Katti, "Speech recognition by machine: A review," Int. J. Comput. Sci. Inf. Secur., vol. 6, no. 3, pp. 181–205, 2009.
- [5]. Y. Zhang, "Speech recognition using deep learning algorithms," Stanford Univ., Stanford, CA, USA, Tech. Rep., 2013, pp. 1–5. [Online]. Available: https://scholar.google.com/scholar?as_q=Speech+Recognition+Using+Deep+Learning+Algorithms&as_occt=title&hl=en&as_sdt=0%2C31
- [6]. I. Shahin, A. B. Nassif, and S. Hamsa, "Novel cascaded Gaussian mixture model-deep neural network classifier for speaker identification in emotional talking environments," Neural Comput. Appl., to be published

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- [7]. Goldman, J., et al., Accessing the spoken word. International Journal on Digital Libraries, 2005. 5(4): p. 287-298
- [8]. P.J. Liu, and C.D. Manning, Get to the point: Summarization with pointer-generator networks. arXiv preprint arXiv:1704.04368, 2017.
- [9]. Banerjee, S. and A.I. Rudnicky. An extractive-summarization baseline for the automatic detection of noteworthy utterances in multi-party human-human dialog. in Spoken Language Technology Workshop, 2008. SLT 2008. IEEE. 2008. IEEE.
- [10]. Dana Rezazadegan1,2,*, Shlomo Berkovsky2, Juan C. Quiroz3,2, A. Baki Kocaballi4,2, Ying Wang2, Liliana Laranjo5,2, Enrico Coiera. Automatic Speech Summarisation: A Scoping Review.
- [11]. Y. Zhang, "Speech recognition using deep learning algorithms," Stanford Univ., Stanford, CA, USA, Tech. Rep., 2013, pp. 1–5. [Online]. Available: https://scholar.google.com/scholar?as_q=Speech+Recognition +Using+ Deep+Learning+Algorithms&as occt=title&hl=en&as sdt=0%2C31.
- [12]. L. Deng et al., "Recent advances in deep learning for speech research at Microsoft," in Proc. IEEE Int. Conf. Acoust., Speech Signal Process., May 2013, pp. 8604–8608.
- [13]. G. H. Rachman and M. L. Khodra, "Automatic rhetorical sentence categorization on Indonesian meeting minutes," 2016 International Conference on Data and Software Engineering (ICoDSE),2016.
- [14]. Megha Manuell, Amritha S Menonl, Anna Kallivayalill, Suzana Isaacl and Lakshmi K.S2, Automated Generation of Meeting Minutes Using Deep Learning Techniques. March 2022.
- [15]. Zhang, Justin Jian Fung, Pascale Chan, Ricky "Automatic minute generation for parliamentary speech using conditional random fields. Acoustics, Speech, and Signal Processing".
- [16]. Beam Tasbiraha Athaya, Tasbiraha Munira, Sirajum Zaman, Afsana Zaman Hossain, Syed Kabir, Col. "A Proposed Algorithm and Architecture for Automated Meeting Scheduling and Document Management, 2018.
- [17]. Yamaguchi, A., Morio, G., Ozaki, H., Yokote, K.-i., Nagamatsu, K. (2021) Team Hitachi @ AutoMin 2021: Reference-free Automatic Minuting Pipeline with Argument Structure Construction over Topic-based Summarization. Proc. First Shared Task on Automatic Minuting at Interspeech 2021.
- [18]. J.N.Madhuri, Ganesh Kumar R., Extractive text summarization using sentence ranking, 2019 IEEE.
- [19]. Josef Steinberger., KarelJezek., "Using latent semantic evaluation in textual content summarization and summary evaluation", Department of computing and Engineering, 2014.
- [20]. M.N. Ingole, M.S. Bewoor, S.H. Patil "Text summarization using expectation maximisation cluster based algorithms" International Journal of Engineering Research and Applications 2012.
- [21]. Athanasia Zlatintsi, Elias Iosif, "Audio salient occasion detection and summarization the usage of audio and textual content modalities".
- [22]. Furui, S. and T. Kawahara, Transcription and distillation of spontaneous speech, in Springer Handbook of Speech Processing. 2008, Springer.
- [23]. Pratima Mohan Thorat, Prof. Dr. M. S. Bewoor, A Novel Approach for Voice based Text Summarizer, 2020 IEEE
- [24]. S. and Y. Liu, Using N-best lists and confusion networks for meeting summarization. IEEE Transactions on Audio, Speech, and Language Processing,

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