

Memorability of conversations: factors and automatic prediction

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Description

Humans have a selective memory. They are good at capturing the most critical moments of a conversation but are generally incapable of remembering every detail. One way in which artificial agents can become more socially-aware is by modelling how humans remember conversations. The first step towards understanding how humans choose what to remember is by studying the human encoding process and more explicitly how sensory information is filtered and stored in memory. Memorability has been studied from a computer vision point of view [3, 4] also investigating multimodal aspects [1]. However, in these studies, a conversational setting has widely been ignored.

This thesis project will investigate what makes some parts of a conversation more memorable than others. You will automatically extract behavioural cues and apply machine learning algorithms in the context of both group and dyadic conversations.

Related courses

- Conversational Agents (CS4270)
- Seminar Social Signal Processing (CS4165)
- Behaviour Change Support Systems (CS4015)
- AI techniques (IN4010)

Related key publications

[1] Anelise Newman, Camilo Fosco, Vincent Casser, Allen Lee, Barry McNa-mara, and Aude Oliva. Multimodal Memorability: Modeling Effects of Semantics and Decay on Video Memorability. arXiv:2009.02568 [cs], September 2020. <https://arxiv.org/abs/2009.02568>

[2] Britta Wrede. Spotting hotspots in meetings: Human judgments and prosodic cues. Proc. Eurospeech. <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.14.1840>

[3] Romain Cohendet, Claire-Helene Demarty, Ngoc Duong, and Martin Engilberge. VideoMem: Constructing, Analyzing, Predicting Short-Term and Long-Term Video Memorability. In 2019 IEEE/CVF International Conference on Computer Vision (ICCV), pages 2531–2540, Seoul, Korea (South), October 2019. IEEE. https://openaccess.thecvf.com/content_ICCV_2019/html/Cohendet_VideoMem_Constructing_Analyzing_Predicting_Short-Term_and_Long-Term_Video_Memorability_ICCV_2019_paper.html

[4] Sumit Shekhar, Dhruv Singal, Harvineet Singh, Manav Kedia, and AkhilShetty. Show and Recall: Learning What Makes Videos Memorable. In 2017 IEEE International Conference on Computer Vision Workshops (ICCVW), pages 2730–2739, Venice, Italy, October 2017. IEEE.

https://openaccess.thecvf.com/content_ICCV_2017_workshops/papers/w40/Shekhar_Show_and_Recall_ICCV_2017_paper.pdf

[5] Catherine Lai, Jean Carletta, and Steve Renals. Detecting Summarization Hot Spots in Meetings Using Group Level Involvement and Turn-Taking Features. August 2013.

[https://www.research.ed.ac.uk/portal/en/publications/detecting-summarization-hot-spots-in-meetings-using-group-level-involvement-and-turmtaking-features\(4c7fe78e-3b37-4fd7-9c74-565880464382\).html](https://www.research.ed.ac.uk/portal/en/publications/detecting-summarization-hot-spots-in-meetings-using-group-level-involvement-and-turmtaking-features(4c7fe78e-3b37-4fd7-9c74-565880464382).html)

[6] William L. Benoit and Pamela J. Benoit. Memory for conversational behavior. Southern Communication Journal, 56(1):24–33, December 1990.

www.tandfonline.com/doi/abs/10.1080/10417949009372813