

DOME - DOminance in MEetings Dataset

A Multimodal Corpus for studying dominance in small group conversations

This is a multimodal corpus with dominance annotations on small group conversations. We used five-minute non-overlapping slices from a subset of meetings selected from the popular AMI corpus. The total length of the annotated corpus corresponds to 10 hours of meeting data. Each meeting is evaluated by three annotators according to their level of perceived dominance.

Meeting Corpus

We use a subset of the Augmented Multi-party Interaction (AMI) corpus for this study (Carletta et al., 2005). The AMI meeting corpus includes two types of meetings: scenario meetings, in which participants are given the task of designing a remote control over a series of meeting sessions with roles assigned for each participant (one being the project manager with the overall responsibility); and non-scenario meetings in which participants were free to choose their own topic. Each meeting has four participants.

Meetings in the AMI corpus were carried out in a multi-sensor meeting room. The room contains a table for four participants, a slide screen and a white board. The audio is recorded via several microphones: two circular microphone arrays on the ceiling and on the table, headset and lapel microphones. The video is recorded via seven cameras: Three cameras on the sides and back of the room and four cameras on the table.

Dominance Task and Annotations

We collected a set of annotations on a subset of the meetings selected from the AMI corpus. The dataset corresponds to more than 10 hours of recordings. We follow the "thin slice" approach and use five-minute meeting segments for the annotations. We asked the annotators their perceived dominance of the meeting participants.

We define two dominance estimation tasks:

- Estimate the most dominant (MD) person in the meeting
- Estimate the least dominant (LD) person in the meeting

To create ground truth for these tasks, we analyzed the annotator agreement for each meeting: For each meeting segment, three annotators ranked the participants according to their level of perceived dominance. We then assessed the agreement between the three annotators for each meeting. If all annotators ranked the same participant as the highest (resp. lowest), we assume there is a full agreement on the most (resp. least) dominant person. If at least two annotators ranked the same participant as the highest (resp. lowest), we assume there is a majority agreement on the most (resp. least) dominant person.

Based on this analysis, we defined the following datasets:

- FMD: Full agreement set, most dominant person estimation task
- FLD: Full agreement set, least dominant person estimation task
- MMD: Majority agreement set, most dominant person estimation task
- MLD: Majority agreement set, least dominant person estimation task

The following table show the datasets, how they are formed and the number of examples in them:

DOME (125 annotations)	Full	Maj
MD	FMD - 67	MMD - 121
LD	FLD - 71	MLD - 117

More information about the corpus can be found in this paper:

[Oya Aran, Hayley Hung, Daniel Gatica-Perez, "A Multimodal Corpus for Studying Dominance in Small Group Conversations", LREC workshop on Multimodal Corpora: Advances in Capturing, Coding and Analyzing Multimodality, Malta, May 2010.](#)

Audio and video files

The audio and video files that are used are taken from the AMI corpus and they can be downloaded from the [AMI web site](#).

There are two types of download files, **datasets** and **annotations**:

datasets: comma separated file. Each line has the following content: (name; start (sec); end (sec); FMD; FLD; MMD; MLD). Name defines the AMI meeting name, start and end seconds define the segment, FMD, FLD, MMD and MLD columns define whether that segment is in that dataset (i.e. if FMD column is 1, the segment is in FMD dataset; 0 otherwise.)

annotations: The dominance rankings of each of the three annotators for each segment. Each line has the following content: (name; start (sec); end (sec); A11;A12;A13;A14;A21;A22;A23;A24;A31;A32;A33;A34). Axy defines the ranking of annotator x for person y (The lower the number, the higher the rank. The highest rank is 1 and lowest is 4). Person ID's match the ID's of the closeup cameras. For headset and lapel microphone ID's and their association with the camera ID's please refer to the AMI corpus web site.

How to cite

Please cite the following publication if you use this database

- Oya Aran, Hayley Hung, Daniel Gatica-Perez, "A Multimodal Corpus for Studying Dominance in Small Group Conversations", LREC workshop on Multimodal Corpora: Advances in Capturing, Coding and Analyzing Multimodality, Malta, May 2010.

Other Related Publications

- O. Aran, D. Gatica-Perez, Fusing Audio-Visual Nonverbal Cues to Detect Dominant People in Group Conversations, International Conference on Pattern Recognition (ICPR), Istanbul, 2010.
- D. B. Jayagopi, H. Hung, C. Yeo, and D. Gatica-Perez, Modeling Dominance in Group Conversations from Nonverbal Activity Cues IEEE Trans. on Audio, Speech, and Language Processing, Special Issue on Multimodal Processing for Speech-based Interactions, Vol. 17, No. 3, pp. 501-513. Mar. 2009
- D. B. Jayagopi, H. Hung, C. Yeo, and D. Gatica-Perez, Predicting the Dominant Clique in Meetings through Fusion of Nonverbal Cues in Proc. ACM Int. Conf. on Multimedia (MM), Vancouver, Oct. 2008
- D. B. Jayagopi, S. Ba, J.-M. Odobez, and D. Gatica-Perez, Predicting Two Facets of Social Verticality in Meetings from Five-minute Time Slices and Nonverbal Cues in Proc. Int. Conf. on Multimodal Interfaces (ICMI), Special Session on Social Signal Processing, Chania, Oct. 2008
- H. Hung, D. B. Jayagopi, S. Ba, J.-M. Odobez, and D. Gatica-Perez, Investigating Automatic Dominance Estimation in Groups from Visual Attention and Speaking Activity in Proc. Int. Conf. on Multimodal Interfaces (ICMI), Chania, Oct. 2008
- H. Hung and D. Gatica-Perez Identifying Dominant People in Meetings from Audio-Visual Sensors, in Proc. IEEE Int. Conf. on Automatic Face and Gesture Recognition (FG), Special Session on Multi-Sensor HCI for Smart Environments, Amsterdam, Sep. 2008
- J. Carletta et al. 2005. The AMI meeting corpus: A preannouncement. In Workshop Mach. Learn. for Multimodal Interaction (MLMI'05), U.K., pages 28-39, July.