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Workshop on Interdisciplinary Insights into Group and Team Dynamics

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Workshop on Interdisciplinary Insights into Group and Team Dynamics

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ABSTRACT

There has been gathering momentum over the last 10 years in the study of group behavior in multimodal multiparty interactions. While many works in the computer science community focus on the analysis of individual or dyadic interactions, we believe that the study of groups adds an additional layer of complexity with respect to how humans cooperate and what outcomes can be achieved in these settings. Moreover, the development of technologies that can help to interpret and enhance group behaviours dynamically is still an emerging field. Social theories that accompany the study of groups dynamics are in their infancy and there is a need for more interdisciplinary dialogue between computer scientists and social scientists on this topic. This workshop has been organised to facilitate those discussions and strengthen the bonds between these overlapping research communities.

KEYWORDS

group dynamics, multiparty interaction, multimodal interaction, social psychology, social signal processing, affective computing

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1 INTRODUCTION

Human life happens in groups whether at work or leisure. In keeping with this year's ICMI theme on multimodal interaction and its role in society, we have organised this workshop on interdisciplinary insights into group and team dynamics. Recently, in the fields of social signal processing and affective computing, there has been a trend to move from controlled lab experiments to perception of group phenomena in uncontrolled real life settings, leading to significant technical challenges. This implies a great need to gather more data in order to train, validate, and test methods for behaviour perception, modelling, and synthesis.

To capture temporal group and team dynamics, both social and computer scientists are increasingly working with annotated behavioral interaction data. Such data can provide the basis for developing novel research lines that capture dynamic, often "messy" group phenomena and at the same time provide intriguing challenges for the automated analysis of multimodal interaction. For example, what can the behavioral patterns of social signals in group interactions tell us about complex, often difficult to grasp emergent group constructs such as conflict, cohesion, cooperation, or team climate? Technological advances in social signal processing allow for novel ways of group analysis to tackle these types of questions. At the same time, a growing number of group researchers with a background in the social sciences are embracing more behavioral approaches to group phenomena. Facilitating dialogue and collaboration among these disciplines has the potential to radically innovate future work in both multimodal interaction and group research.

This workshop is part of a timeline of initiatives starting from a 2016 Lorentz Workshop [1] which aimed to bring group scholars and researchers in the social and affective computing community together. Our strong belief is that there is a lot to gain by both sides from meeting, discussing ideas, and working together. This effort is a continuation of previous efforts to bring more group researchers and computer scientists together by providing a meeting point to encourage more collaboration. The following events were co-organised by organisers or attendees of the Lorentz Workshop:

- ICMI workshop on Group Interaction Frontiers in Technology, 2018 (Boulder Colorado) [2];
- Symposium on Group Dynamics, 2018 (Delft, The Netherlands),
- INGRoup Preconference on Frontiers of Group Interaction Research - Promoting collaborations among social and computer scientists, 2019 (Lisbon, Portugal);
- ACII workshop on Emotions and Emergent States in Groups, 2019 (Cambridge, UK)

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Our aim is to continue assisting group scholars and researchers in multimodal interaction to develop a common language and a platform to meet, to foster and maintain relationships, and to grow as a community. One of the biggest challenges is the culture of publication in conferences for computer science, which differs from how social scientists work. The workshop will provide a sympathetic approach to this issue, will enable participation from both disciplines, and will allow participants to provide feedback to each other about how best to carry out and disseminate research on this topic.

2 KEYNOTE SPEAKERS

In addition to presenting submitted papers, the workshop also features two keynote speakers:

- Kazuhiro Otsuka
- Joann Keyton

The speakers were chosen in accordance with the workshop's aim to highlight research from both the multimodal interaction and group research communities.

3 WORKSHOP ORGANISATION

Each submitted paper was assigned to at least two reviewers, and we aimed for each paper to have at least one reviewer from the multimodal interaction community and at least one from the group research community.

3.1 Organising Committee

- Hayley Hung, Delft University of Technology
- Gabriel Murray, University of the Fraser Valley
- Giovanna Varni, LTCI, Télécom Paris, Institut polytechnique de Paris
- Nale Lehmann-Willenbrock, University of Hamburg
- Fabiola H. Gerpott, WHU - Otto Beisheim School of Management
- Catharine Oertel, Delft University of Technology

Several members of the organising committee were involved in organising similarly-themed group interaction events described in Section 1.

3.2 Program Committee

- Joseph Allen
- Oya Aran
- McKenzie Braley
- Ronald Böck
- Oya Celiktutan
- Sasha Cook
- Sarah Gillet
- Giorgio Gnecco
- Hatice Gunes
- Joakim Gustafson
- Hanna Lisa Handke
- Dinesh Babu Jayagopi
- Lesley Jessiman
- David Johnson
- James Kennedy
- Florian Klonek
- Uliyana Kubasova
- Lucien Maman
- Kazuhiro Otsuka
- Albert Ali Salah
- Gualtiero Volpe

4 CONCLUSION

Our hope with this workshop is that it will facilitate collaborations between researchers in different communities and be a springboard to further interdisciplinary gatherings in the coming years.

REFERENCES

[1] Nale Lehmann-Willenbrock, Hayley Hung, and Joann Keyton. 2017. New frontiers in analyzing dynamic group interactions: Bridging social and computer science. *Small group research* 48, 5 (2017), 519–531.

[2] Gabriel Murray, Hayley Hung, Joann Keyton, Catherine Lai, Nale Lehmann-Willenbrock, and Catharine Oertel. 2018. Group Interaction Frontiers in Technology. In *Proceedings of the 20th ACM International Conference on Multimodal Interaction*. ACM, 660–662.