Sensing Engagement: Helping Performers to Evaluate their Impact

Pablo Cesar
CWI: Centrum Wiskunde & Informatica
Amsterdam, the Netherlands
P.S.Cesar@cwi.nl

ABSTRACT
The keynote will provide an overview about different mechanisms to gather data by using wearable sensor technology for understanding the experience of people attending cultural events, public lectures, and courses. Through practical case studies in different areas of the creative industries and education, we will showcase our results and discuss about our failures. Based on realistic testing grounds, collaborating with several commercial and academic partners, we have deployed our technology and infrastructure in places such as the National Theatre of China in Shanghai. Our approach is to seamless connecting fashion and textiles with sensing technology, and with the environment. The final objective is to create intelligent and empathic systems that can react to the audience and their experience.

CCS Concepts/ACM Classifiers
H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

Author Keywords
Sensors; cultural experiences; education; GSR; shared experiences; physical installation; data visualization

BIOGRAPHY
Dr. Pablo Cesar leads Distributed and Interactive Systems group (http://www.dis.cwi.nl) at CWI and is Associate Professor at TU Delft. Pablo's research focuses on modeling and controlling complex collections of media objects (including real-time media and sensor data) that are distributed in time and space. His fundamental interest is in understanding how different customizations of such collections affect the user experience. In particular, he is interested about the following research questions:

- Dynamic media creation and production: facilitating temporal compilations and aggregations based on the dynamic constraints (preferences, context);
- User response and attention: development of mechanisms for monitoring and modeling user affinity and engagement to events and media content; and
- Social and immersive consumption of media: policies and interfaces for content adaptation.

Pablo Cesar is the PI of two EU-funded projects on connected media experiences: VRTogether (focusing on 3D) and 2-IMMERSE (focusing on multi-platform consumption of media). He was recently the PI of two Public Private Partnership projects with Xinhuanet (2014-2016) and ByBorre (2016). These projects explored the use of sensor technology and smart textiles for better monitoring the experience of users participating in cultural or educational events. Pablo participated as PI as well in very successful EU-funded projects like REVERIE (2011-2015) and Vconect (2011-2014). He has keynoted at venues such as the International Conference on Physiological Computing Systems (2017), the Sense of Contact Conference (2016), and the International Workshop on Immersive Media Experiences (2015). Pablo has (co)-authored over 100 articles with several of his publications winning the best paper award: PhyCS (2016, ACM MMsys (2016 and 2013)... He is member of the editorial board of, among others, IEEE Transactions on Multimedia (IEEE TMM) and ACM Transactions on Multimedia (TOMM). Pablo has given tutorials about multimedia systems in prestigious conferences such as ACM Multimedia, CHI, and the WWW conference. He acted as an invited expert at the European Commission's Future Media Internet Architecture Think Tank and participates in standardization activities at MPEG (point-cloud compression) and ITU (QoE for multi-party tele-meetings).

More information: http://homepages.cwi.nl/~garcia/

REFERENCES
1. P. Cesar, V. Singh, R. Jain, N. Sebe, and N. Oliver (eds.) 2018. New Signals in Multimedia Systems and Applications: Sensing and Understanding Human Behavior and Interactions. *IEEE Multimedia.*
2. C. Wang and P. Cesar. 2017. The Play Is a Hit - But How Can You Tell? *Proceedings of ACM Creativity and Cognition.*
3. T. Roggla, C. Wang, L. Perez Romero, J. Jansen, P. Cesar. 2017. Tangible Air: An Interactive Installation for Visualising Audience Engagement. *Proceedings of ACM Creativity and Cognition.*
4. C. Wang, J. Wong, X. Zhu, T. Roggla, J. Jansen, and Pablo Cesar. 2016. Quantifying Audience Experience in the Wild: Heuristics for Developing and Deploying a Biosensor Infrastructure in Theaters. *Proceedings of the International Workshop on Quality of Multimedia Experience.*
5. C. Wang, E. Geelhoed, P. Stenton, and P. Cesar. 2014. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 1909-1912.

MultiEdTech'17, October 27, 2017, Mountain View, CA, USA

ACM ISBN 978-1-4503-5508-7/17/10
DOI: https://doi.org/10.1145/3132390.3132391