

An Interaction Mining Suite Based On Natural Language Understanding

Rodolfo Delmonte^{1,2}, Vincenzo Pallotta¹, Violeta Seretan³, Lammert Vrieling¹, David Walker¹

(1) Interanalytics, Geneva, Switzerland

(2) Department of Language Science, University of Venice, Italy

(3) School of Informatics, University of Edinburgh, United Kingdom

delmonte@unive.it, <firstname.surname>@interanalytics.ch, violeta.seretan@gmail.com

We introduce Interanalytics™ *Interaction Mining suite*, a collection of tools that performs the analysis, summarization and visualization of conversational content. Interaction Mining is an emerging Business Intelligence (BI) application whose main goal is the discovery and automatic extraction of useful information from human conversational interactions for analytical purposes. Conversations – interactions that serve specific purposes and whose participants contribute to the achievement of a shared goal – are ubiquitous in our real and digital life. Especially on the Internet, people interact in natural language using several technologies such as social networks, instant messaging, VoIP, discussion forum, or (micro)blogs.

Turning conversational data into meaningful information leads to better business decisions through appropriate visualization and navigation techniques. Interanalytics™ leveraged an advanced Natural Language Understanding (NLU) technology to a BI tool enabling analysts to understand and generate insights from conversational content in selected business applications such as Speech Analytics, Social Media monitoring, and Market Research (Pallotta 2010). In order to achieve this, Interanalytics™ has tailored a sophisticated (NLU) technology for mining universal facets of digital conversations (Delmonte et al. 2009). We will demonstrate the main features of the Interaction Mining suite by showcasing two business applications:

1. Advanced abstractive summarization for multi-party discussions (e.g. meetings, focus groups, political debates) that highlights the processes of opinion negotiation and decision-making. The tool produces high-quality memos and insightful visualization of the participants' behavior in terms of their collaborative participation to the discussion (Pallotta et al. 2011).
2. Contact Centers conversations analysis that enables the implementation of novel practical metrics for contact center quality management. The tool allows quality managers to assess agents' performance and predict customer-rating outcomes.

More generally, we will discuss how Interanalytics™ technology enables a wider spectrum of Business Intelligence for unstructured and conversational data. More information about Interanalytics™ can be found at www.interanalytics.ch.

References

PALLOTTA V., DELMONTE R., BISTROT A. Abstractive Summarization of Voice Communications. In Vetulani Z. (Ed.) *Human Language Technology: challenges for the information society*. LNCS n. 6562, Springer Verlag. April, 2011.

PALLOTTA V. Content-based retrieval of distributed multimedia conversational data. In A. Soro, E. Vargiu, G. Armano, G. Paddeu (eds.) *Information Retrieval and Mining in Distributed Environments*, Springer Verlag series: Studies in Computational Intelligence, 2011, Volume 324/2011, pp. 183-212, 1st Edition, ISBN: 978-3-642-16088-2.

DELMONTE R., BRISTOT A., VOLTOLINA G., PALLOTTA V. Scaling up a NLU system from text to dialogue understanding. Proceedings of the *NAACL HLT Workshop on Software Engineering, Testing, and Quality Assurance for Natural Language Processing*, pages 40–41, Boulder, Colorado, June 2009. Association for Computational Linguistics.