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Background and Motivation
With the recent development of deep learning, research in artificial intelligence (AI) has gained new vigor and prominence. Machine learning, however, suffers from three big issues, namely:
1. Dependency: it requires (a lot of) training data and is domain-dependent;
2. Consistency: different training or tweaking leads to different results;
3. Transparency: the reasoning process is uninterpretable (black-box algorithms).

Sentic computing addresses such issues in the context of natural language processing (NLP) through a multi-disciplinary approach that aims to bridge the gap between statistical NLP and many other disciplines that are necessary for understanding human language, such as linguistics, commonsense reasoning, and affective computing. Sentic computing, whose term derives from the Latin sensus (as in commonsense) and sentire (root of words such as sentiment and sentience), enables the analysis of text not only at document, page or paragraph level, but also at sentence, clause, and concept level.

This is possible thanks to the fact that sentic computing is both top-down and bottom-up: top-down for the fact that it leverages symbolic models such as semantic networks and conceptual dependency representations to encode meaning; bottom-up because it uses sub-symbolic methods such as deep neural networks and multiple kernel learning to infer syntactic patterns from data. Coupling symbolic and sub-symbolic AI is key for stepping forward in the path from NLP to natural language understanding. Relying solely on machine learning, in fact, is simply useful to make a ‘good guess’ based on past experience, because sub-symbolic methods only encode correlation and their decision-making process is merely probabilistic. Natural language understanding, however, requires much more than that. To use Noam Chomsky’s words, "you do not get discoveries in the sciences by taking huge amounts of data, throwing them into a computer and doing statistical analysis of them: that’s not the way you understand things, you have to have theoretical insights".
In the past ten years, sentic computing positioned itself as a horizontal technology that served as a back-end to many different applications in the areas of e-business, e-commerce, e-health, e-governance, e-security, e-learning, e-tourism, e-mobility, e-entertainment, and more. Some examples of such applications include financial forecasting and healthcare quality assessment, community detection and social media marketing, human communication comprehension and dialogue systems.

In this light, this Special Issue focuses on the introduction, presentation, and discussion of novel approaches that further develop and apply sentic computing models (e.g., the Hourglass of Emotions or Sentic Patterns), algorithms (e.g., Sentic LDA or Sentic LSTM), and resources (e.g., SenticNet or AffectiveSpace) for the design of emotion-sensitive applications. Articles are thus invited in areas such as natural language processing, information retrieval, data mining, pattern recognition, knowledge-based systems, novel neural and cognitive models. Topics include, but are not limited to:

- **Sentic Computing for Human-Computer Interaction**
  - dialogue systems
  - multimodal interaction
  - affective robots

- **Sentic Computing for Business Intelligence**
  - social media marketing
  - recommendation systems
  - customer experience management

- **Sentic Computing for Finance**
  - market trend prediction
  - portfolio management
  - asset allocation

- **Sentic Computing for Healthcare**
  - outbreak management
  - patient-reported outcome measures
  - mental disorder detection

- **Sentic Computing for Social Media Monitoring**
  - cyber issue detection
  - political forecasting
  - public opinion mining

- **Sentic Computing for Social Good**
  - sexual harassment detection
  - discrimination prevention
  - suicidal ideation detection

- **Sentic Computing for the Arts**
  - emotion visualization
  - ethnography
  - emotional design in digital media
The Special Issue also welcomes papers on specific application domains of sentic computing. To be considered, authors will need to clearly establish relevance of their paper to the scope of the Special Issue and the journal. The authors will be required to submit their papers at http://www.editorialmanager.com/cogn (select the option “S.I.: A Decade of Sentic Computing” at the end of the submission process) and follow the Author’s Guide for manuscript submission to Cognitive Computation. No extensions will be granted.

**Composition and Review Procedures**

The Special Issue will consist of papers on novel methods and techniques that further develop and apply sentic computing tools for the development of emotion-sensitive tools, techniques, or applications. Some papers may survey various aspects of the topic. The balance between these will be adjusted to maximize the issue’s impact. All articles are expected to successfully negotiate the standard review procedures for Cognitive Computation.

**Timeframe**

Submission Deadline: June 1st, 2020  
Notification of Acceptance: August 1st, 2020  
Final Manuscripts Due: September 1st, 2020  
Date of Publication: December 2020