AUTOMATIC LINKS IDENTIFICATION
IN CHAT CONVERSATIONS

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Abstract. *This paper considers one of the emerging branches of the science of learning, Computer-Supported Collaborative Learning (CSCL), together with an up-to-date issue of this field: identifying relationships among utterances in a chat performed by students. This issue is just a particular case of a more general one - determining discussion threads in a conversation on a CSCL-supported platform (forum, chat, etc.) - by using techniques of natural language processing and machine learning from artificial intelligence. Furthermore, several approaches of the problem, with the corresponding results, will be presented.*

Keywords: CSCL, polyphony, NLP, implicit links, WEKA, NLTK, TagHelper, chats

1. Computer supported collaborative learning

Computer supported collaborative learning is a "new branch in the science of learning which aims to study the way people learn together helped by computers" [19]. Although CSCL gained its popularity in recent years, the term was coined in the late 80s and the first projects and conferences were held in the mid 90s. Currently, CSCL uses modern tools for its purposes and the contributions of the research in this field are reflected in various sciences like software industry, education, psychology or sociology. Thus, the classical process of learning is improved towards a modern, transparent and interactive method which brings the advantages of collaborative learning [12]:

- positive mutual dependency: participants are aware that they depend on each other and that they need each other to accomplish the task
- individual responsibility: responsibility is divided among group as a whole and its individual members
- social abilities: in order to work in such a group, one needs social abilities as well as communication abilities.

Unfortunately, studies have shown that this flavor of learning facilitated by computers can have a negative impact on the interaction between group members. "It was observed that in these groups trust, cohesion, efficiency, as well as the change of ideas are suffering" [14] which affects the overall efficiency.

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