Linguistic intelligence: computers vs. humans

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Abstract

Computers are ubiquitous – they are and are used everywhere. But how good are computers at understanding and producing natural languages (e.g. English or Bulgarian)? In other words, what is the level of their linguistic intelligence? This presentation will examine the linguistic intelligence of the computers and will look at the challenges ahead….

I shall begin by a brief historical flashback. I shall plot the timeline of the linguistic intelligence of computers against that of humans. Natural Language Processing (NLP) advances in the last 20 years have made it possible for the linguistic intelligence of computers to increase significantly but they are still behind humans…

The presentation will explain why it is so difficult for computers to understand, generate and in general, to process natural language texts – it is a steep road/learning curve, it is long and winding road for both computers and researchers who seek to develop intelligent programs. The talk will also briefly present well-established NLP techniques computers follow when 'learning' to 'speak' our languages, including rule-based and knowledge-based methods initially and machine learning and deep learning methods more recently, the latter being regarded as highly promising. A selection of Natural Language Processing applications will be outlined next.

I am not a clairvoyant, but at some of my plenary talks I have been asked to predict how far will computers go... At the end of my presentation I shall share with you what I predict for the future and in general, what my vision is.