

## IJCAI 2016 – The Best AI Times Ever?

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**Keywords:** Conference report, IJCAI, AI

**Received:** August 5, 2016

### Editorial

The 25<sup>th</sup> 2016 International Joint Conference on Artificial Intelligence (IJCAI) was held in New York, USA from July 9<sup>th</sup> to July 15<sup>th</sup>. This was the first IJCAI annual conference after a series of two-years intervals. Before the event, some concern was raised regarding the expected number of contributions because of the twice shorter time for preparation and paper submission. Another issue was the New York itself as one of the most expensive world metropolis.

In reality, 2300 papers were submitted and 1700 participants poured into the Hilton hotel, one of the best numbers of all times. Of 2300 papers, 551 were accepted. The conference was accompanied with various events such as 3-days of workshops and tutorials, and a visit to the Museum of modern arts.

The central theme of IJCAI'16 was "Human aware AI". Indeed, many papers dealt with AI systems recognizing human physical and mental state and activities including sentiments and feelings. On the other hand, this IJCAI was much more cautious in terms of too much AI hype. For example, while papers were dealing with feelings, it was often emphasized that there is a distinction between human feelings and what is perceived through AI systems. Similarly, the researchers were careful not to provide a tentative but unreal claim to "fully" understand or simulate human properties.

Of particular interest were the "White House workshops" at which several White House leaders, i.e. political leaders of medium range openly and privately discussed several AI-related issues with the invited scientists. While such relations with national official are of great importance, it was a bit unclear if this mixture of politics and science leaves no influence on the scientific objectivity. An example was an issue of police treatment of suspects of different heritage. This is a valid research as long as politicians remain remote. Otherwise, such analyses should be treated as compromised by default since history tells us that nearly all research was more or less influenced as soon as politics was involved in any way. Having observed that, the influence of AI on leadership is of great value and importance since it can provide valuable estimation of future actions.

In terms of AI progress in the last year and AI relevance in real world, it was often emphasized that now it is the golden AI era, the best AI times ever. The number of killer AI applications is growing fastest ever, there are lots of new AI students, and applicants with

knowledge of AI or machine learning have advantage at job applications.

It was particularly interesting to observe the relation between the IJCAI leaders and the superintelligence (SI) issues. In recent years, a world-wide attention was caused by top world thinkers like Hawkins, Gates or Musk that AI will soon by-pass humans in nearly all mental activities, and that the emergence of SI might endanger the human race. As a result, at IJCAI'15 in Argentina several aspects of SI were discussed. For example, a position to prohibit autonomous weapons in a similar way as biological weapons was proposed. Following these events in several societies, a world-wide movement to stop autonomous weapons was established. Intensive lobbying was carried out in several countries and in particular in UN.

In 2016, leading AI researchers have taken a pragmatical stance on the SI issue. Instead of trying to define intellectual world opinions, the main orientation was "back to the future", i.e. back to the technical achievements. AI visions and trends were distanced from the IJCAI leadership nearly as kind of speculations and science fiction. Moreover, several warnings were issued that expectation and prognoses of computers overpassing humans are technically not correct, rather resembling overhyped media reactions.

The influence of AI on our everyday life is neither fully understood not fully appreciated. While killer applications, i.e. great successes, are reasonably well presented in major media, e.g. organ exchange, self-driving cars, Google's AlphaGo or Amazon's AI, several other achievements are not. Consider an example that was not presented in main-stream media: When an infants of an AI researcher Michael Jordan was examined by ultrasound, white dots were discover near the heart. The clinical advice was to perform an additional test with 1/250 chance of causing severe consequences including death. As AI scientist and father he examined all available papers and in particular those describing the sensing data and clinical experience. The scientific relation between the white dots and the later observed problems was empirically correctly observed and derived. But there was an unexpected catch: the screens progressed to higher resolution showing little white dots as a result of the moving heart. This hypothesis fitted well to the empirical observation that a percentage of pictures of white dots increased substantially after the advanced screens were observed. Unaware of the

modifications, medical staff performed unnecessary many demanding tests. Worldwide, the number was counted in thousands or even tens of thousands. No medal was delivered to the AI researcher observing a small, but important glimpse in the infant screening procedure except for himself not exposing his son to the unnecessary risk. However, the observation quickly spread all over the world.

Time for some superficial and some substantial critical observations. In terms of conference organization, several issues improved compared to the last one. For example, the banquet at the Central Park Zoo was quite a nice picnic and not the usual pig-style mess or boring stationary dinners. And New York is still a city that never slips with its charm included. Still, the food was from time to time nearly cold and there were no IJCAI shirts as traditional at other locations.

Since the author of this editorial last visited NY and Twin Towers around 20 years ago, comparing memories and the current situation was quite interesting. Most observable, people have become much more tolerant in the traffic and among each other. It felt kind of European, kind of warm and nice. On the other hand, the NYC progress is not nearly comparable to the progress of Shanghai, Dubai or even Moscow. Something is essentially wrong with the developed countries that is causing the stalling. Human top countries would better redefine themselves sooner than later.

In summary: While turning attention to the fantastic technical AI progress is no doubt a reasonable orientation, distancing from predicting the future seems strange, in particular in the land of the free and brave. Nevertheless, AI is changing our everyday life and future at a pace unbelievable even for AI experts.

**Acknowledgement:**

I would like to sincerely thank IJCAI 2016 Conference Chair Dr. Gearhard Brewka for reading this editorial and providing valuable remarks.