Does AI Need a New Debate on Ethics?

Ute Schmid

Dear readers,

sometimes I watch TV in the evening. In September 2013, after the news, there was a preview of a talk show. The topic to be discussed was 'The digital self—survival in the jungle of data'. Among the guests were the writer Hans Magnus Enzensberger and somebody I knew in person!—Stefan Wrobel. Stefan Wrobel is one of the most well-known researchers in German AI and he was formerly an editor of this journal. Of course, I stayed awake and watched the talk show. The buzz word of the show was *Big Data*. The biggest concerns discussed were, as to be expected, NSA and the security of personal data. Another concern was that everybody gets swamped with personalized advertisements.

The most important problem, however, in my opinion, was raised by Hans Magnus Enzensberger: the danger of applying intelligent techniques to such data to predict personal conditions and behaviors such as financial power, state of health, or criminal conduct. He pointed out that people will only recognize the danger of this technology if they won't get a job because their profile is classified into the wrong category. Other examples along this line are: being rejected by a health insurance company because medical history leads to a prediction of a severe and expensive illness in the future or getting arrested because of taking a walk in an area which is currently classified as potential meeting place for criminal elements.

During my undergraduate days, there was some discussion of ethics of AI research in relation to military aims. Currently, a small group of AI-related researchers are discussing robot ethics in the context of technological singularity. Otherwise, most AI researchers, including myself, are focussed on making progress on intellectually fascinating and challenging problems such as autonomous learning, object recognition, context-awareness, or the special topic of this issue—transfer learning—and so on. Of course, AI researchers are trained to do AI research and not to think about the impact of AI technology on society. AI research can be proud that research has now matured so much that it can contribute to solve complex real world problems. Nevertheless, in my opinion, we should at least be aware of possible dangers in relation to certain areas of application, we should point these dangers out to our students—who might find jobs with insurance companies or banking institutes after their graduation—, and we should invite ethicians to a joint debate on the ethics of exploiting big data with AI technology. I would be very happy for contributions along this line in the discussion column of this journal.

Sincerely yours,

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1 Forthcoming Special Issues

1.1 Space Robotics

While Space Exploration may be considered anything but dull, it certainly is very dangerous. Expanding our knowledge on the solar system to look for clues to such fundamental questions as the origins of life, or a sustained human presence on anything other than earth may well be worth the risk. The involved costs for mitigating the risk of human space flight are prohibitive. Robotic missions, like the hugely successful Mars Exploration Rovers, have shown that Robotics as a sub-field of Artificial Intelligence can perform scientific exploration activities without human presence, and will play an even more prominent role in future mission scenarios. World wide technology research efforts are continuously expanded the capabilities of mobile robotic systems. This special issue on 'Space Robotics' of the Künstliche Intelligenz Journal seeks to present a collection of research efforts, industry activities and other insights into this hugely interesting and versatile field of AI.

The topics of interest include, but are not limited to:

– Exploration systems and technologies
– Orbital servicing
– Human mission support
– Operations support
– System design/architecture/behavior

The Künstliche Intelligenz Journal, which is published and indexed by Springer, supports the following lists of formats: technical contributions, research projects, discussions, dissertation abstracts, conference reports and book reviews.

If you are interested in contributing to this special issue, please contact one of the guest editors:

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1.2 Multi-Agent Decision Making

Classical decision making is concerned with how rational agents make optimal decisions. In distributed decision making complex problems are divided into smaller ones and decisions are made in a distributed manner. Also, it often is the case that all involved decision makers are sharing—willingly or not—a global objective and that they are somewhat cooperative.

In general, this is not the case for multi-agent decision making which is concerned with self-interested agents pursuing their own objectives. Those objectives may be consistent but can just as well be completely contradicting; they can be publicly known or private. As a consequence, good decisions no longer only depend on the respective agent's capabilities and the characteristics of the environment, but to a great extent on how other agents behave and on the interaction with them. In most settings these behaviors influence each other and that complicates matters further—new tools and techniques are needed.

This special issue will focus on multi-agent decision making. Topics of interest include but are not limited to:

– Logics for multi-agent systems
– Game theory and (computational) social choice
– Foundations of multi-agent systems
– Multi-agent planning and control
– Norms and social laws
– Argumentation and negotiation
– Decision theory

Possible contribution formats are technical articles, reports of research projects, dissertation summaries, book reviews, and conference reports.

If you are interested in contributing to this special issue please contact the guest editor as soon as possible:

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1.3 Re-integrating AI

Researchers in AI and Robotics have in common the desire to 'make robots intelligent', evidence of which can be traced back to the earliest AI systems. One major contribution of AI to Robotics is the model-centered approach, whereby intelligence is the result of reasoning in models of the world which can be changed to suit different environments, physical capabilities, and tasks. Dually, robots have contributed to the formulation and resolution of

challenging issues in AI, and are constantly eroding the unrealistic modeling abstractions underlying AI problem solving techniques. Forty-eight years after the first AI-driven robot, this special issue on 'Reintegrating AI' seeks to provide a fresh and up-to-date look at the opportunities, challenges and successes which lie at the intersection of AI and Robotics. Topics of interest include, but are not limited to:

– Integration of path and motion planning with task planning
– Knowledge representation and reasoning for robots
– Qualitative representations for robots
– Semantic mapping and reasoning with semantic maps
– Hybrid continuous/discrete reasoning
– Constraint-based reasoning for robots
– Continuous planning and on-line problem solving for robots
– System-level AI for robots
– Knowledge acquisition and knowledge exchange between robots
– Reasoning with uncertain and inconsistent knowledge
– Experience-based learning for robots
– High-level reasoning for exploration

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