AI Quality: towards a useful understanding of fast-moving complex systems.

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Outline:

Everybody is running around in 'AI Panic' these days. What can go wrong? What does it threaten us with!

Well I for one am not worried - YET. We just do not have enough useful information about AI to worry. All 'tools' can be used for good and evil. And evil is always lurking, looking for a new tool.

I am going to suggest, in this talk, some systematic ways, to analyze any AI system, especially regarding potential threatening behavior.

One idea has long been recognized academically and by public bodies: **Analyse AI Quality dimensions**, such as *Transparency*, and *Security*. The problems is that these are defined by vague words. I will suggest **numeric** measures, which will give more information. This will not be easy, but it can be more enlightening. We will become more aware of what we do not know, at least! I recently asked a group of 200 AI-conference-audience people if they could prove to me, that they had quantified AI Transparency or AI Security. Nobody offered anything.

This talk will show detailed examples and patterns, for *how we can quantify*, any interesting and threatening aspects, of AI Systems.

The good news is that we can also **quantify the good attributes** of AI systems, in the same way.

Now the researchers can get to work collecting data for us. They have failed us for too long in this respect. *Then* we have a better basis to decide, if we are worried enough, to pass laws, and to restrict development.

Subjects in the talk:

- Current ways to 'understand' AI systems

- Why these current AI Models are defective.

- Multidimensional AI Models for Qualities, And Costs

- The AI Stakeholder Model

- Understanding AI Strategies in light of Multiple Quality and Cost Attributes

- Teaching The Multi AI model to students and research students as a tools for researching AI developments

- The Quality distinctions between Large Language Model (LLM) AI and the next AI generation (AGI, Artificial General Intelligence)

- The Penta Model as a basic high level view of any AI system.

- The Principles of AI Understanding, outside the blackbox.

BIO:

Tom Gilb has been consulting on management problems, for top management since 1962. As a result he has developed and refined his own powerful methods for management planning. He has worked for many of these years with his son Kai Gilb.

These methods are jointly called 'Planguage' – a Planning Language. They are unique in helping managers to think quantitatively about the qualitative aspects of their decisions. For example how to quantify 'engineering productivity', or general product quality?

Most of the consultancy work is done at the CTO level. Most of it is for technical multinationals, and some financial groups. Most of the work is for planning organizational improvement in productivity and quality (for 10,000 engineers for example). The rest is about big projects (like 1,000 engineers, $100 million).

Tom does not profile himself as a management consultant. In fact he works at the grass roots of advanced engineering, systems, software, aircraft, IT, telecoms, electronics.

This often leads to meeting top managers who appreciate his methods, and become clients. There is a well-documented successful spread of his methods at HP, IBM (CMM 4) and Intel (20,000 engineers trained there in his methods). Other interesting famous method-user organizations are Boeing, Citigroup, JP Morgan, Credit Suisse, Philips, Ericsson, Nokia, Tata Consultancy, Microsoft, Equinor and many others, smaller and less famous.

Tom has been invited to lecture at dozens of universities worldwide (including Berkeley, Stanford, London School of Economics, Imperial College).

In 2012 Tom was made Honorary Fellow of the British Computer Society. He lives in Norway, and is both Norwegian (as of December 2015) and US Citizen (1940).

Tom published 9 printed books and over 20 digital books to date. Available at Leanpub, and Gilb.com.

Toms' various lectures, webinars, presentations, and Ted Talk are available online e.g. YouTube.

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