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# The KIT — Knowledge & Information Technology
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## → Coming in from the Cold

The "Blockchain, IoT and Machine Learning in Oil & Gas" conference just took place in Calgary, Alberta, Canada, with Claude Baudoin as the conference chair. Apart from the outside temperature (-19C the morning after the event), and an audience that was double the number from the previous year, the event was notable for the quality of the speakers, the convergence between the subjects mentioned in the title, and the low level of prior understanding among much of the audience that distributed ledgers can be used for many business purposes (such as securing contracts, avoiding disputes, and more) other than mining cryptocurrencies.

While the focus was Oil & Gas, which still constitutes a (worrisome) high percentage of the economy of Alberta, it is clear that the titular technologies have considerable impact on many other industries as they deal with modernization and digital transformation. As he summarized the conference takeaways for the audience at the end, Claude listed these key messages:

- "It's the data, stupid!"
- Follow the value -- are you looking to reduce costs, optimize operations, drive productivity, improve safety through remote diagnostics, achieve compliance?
- Safety in particular should be a key consideration, given the huge cost (not just financial, of course) of accidents.
- What is the right time to introduce these innovations (what is your appetite for risk and your willingness to see pilot projects fail, vs. being at a competitive disadvantage through late adoption)?
- Partnerships are key, since the new technologies tend to be provided by smaller companies.
- Distributed ledgers (blockchains) are rapidly gaining traction, and they're not just used to make or lose fortunes in bitcoins.
- Don't neglect to consider the broad impact of what you do on society (carbon emissions, changes in the workforce)
- IoT, machine learning and blockchain are not just technologies -- they imply changes in business processes, in supply chain management. and even in the business model and value chain of a company.
- Adding security later will cost twice as much as "designing it in" in the first place.

## → After CPUs and GPUs, Here Come the TPUs

Ten or twelve years ago, we found out that an array of graphical processing units (GPUs), such as the ones made by Nvidia, were not just good at graphics, but could also be used to create cheaper and more compact clusters suited for parallel computing.

The recent surge in machine learning applications for facial recognition, big data analytics, object tracking, language translation, etc., has given rise to a new application development paradigm and open-source data manipulation library called TensorFlow. Google, which developed a hardware architecture called Tensor Processing Units (TPUs), announced a beta program to make TPU boards available to customers. TPUs accelerate suitable workloads while consuming less power than GPUs.

## Reminder: Houston Cyber Summit

The Energy Conference Network is presenting a one-day event in Houston on February 28. In spite of the organizers' focus on the energy industry, this event seems to attract a much broader range of participants, including health, finance, academia and government. Most of the agenda consists of five panel discussions, preceded by a couple of keynote talks and a "live hack demonstration." The registration fee is fairly modest at $195.

## Reminder: Data Residency Webinar

For a summary of the work done by the Object Management Group (OMG) and the Cloud Standards Customer Council (CSCC) on the subject of data residency, and in particular the recently published Data Residency Maturity Model (DRMM), you can attend a webinar on February 27 at 8:00 am Pacific / 11:00 am Eastern / 1600 GMT. For registration instructions, e-mail Tracie Berardi at OMG.

## Biases in Facial Recognition

"Facial recognition is accurate... if you're a white guy" is the title of a New York Times article that reports on the findings of an MIT study on how the accuracy of facial recognition algorithms varies with gender and skin color. The study found that most algorithms work much better for men than women, and for white people vs. darker skin colors. The basic reason is that the datasets used to train the algorithms are mostly (60%) made up of white males. Thus, the skewed representation of ethnicity and gender in computer research translates into technology that will be inadequate or unfair when used in a global context.

## Seen Recently...

*"Technology is not neutral. The choices that get made in building technology have social ramifications."*

-- Mehran Sahami, Stanford Professor of Computer Science, quoted in a New York Times article, " Tech's Ethical Dark Side: Harvard, Stanford and Others Want to Address It."