# The thin line between high performance computing and AI

**Amidst the mad rush to hop on to the AI bandwagon, the industry oft jumps the gun and deems data-driven models to be artificial intelligence.**

By Soumik Ghosh | Apr 06th 2018


While the industry has woken up to the immense potential AI holds, it is still not clear about where high performance computing (HPC) ends and where AI begins. What is powering the AI juggernaut is the wide availability of compute and GPUs that make parallel processing faster and more powerful, while proving to be affordable.

Fondly referred to as the father of artificial intelligence, MIT professor Marvin Minsky defined AI as "the science of making machines do those things that would be considered intelligent if they were done by people."

> Some years back the industry used to talk about big data analytics, but now the name has changed and it's being called artificial intelligence.
>
> **Prakash Mallya**
> MD, Intel India

## Where does HPC end and where does AI begin?

Prakash Mallya, MD of Intel India, brings to the spotlight a frequently asked question that most organizations in today's age find hard to answer – where does high performance computing end, and where does AI begin?

He points out that some years back the industry used to talk about big data analytics; but now the name has changed and it's being called artificial intelligence.

> I believe we keep mixing HPC with AI. When you start solving a problem, you reach a point where you want to delegate the decision making to a system, because you think it's going to take better decisions. And that's when you implement AI with HPC.
>
> **Rajshekar Behar**
> Marketing leader, Julia Computing

Throwing light on this, Rajshekar Behar, marketing leader at Julia Computing– a rapidly rising startup specializing in AI solutions– says: "I believe we keep mixing HPC with AI. AI is an application that needs high performance computing. When you start solving a problem, you reach a point where you want to delegate the decision making to a system, because you think it's going to take better decisions. And that's when you implement AI with HPC," he explains.

He adds that if you come to any second- or third- tier company which has a huge supply chain, all they are trying to figure out is how to optimize that supply chain. "That's just a compute problem, and not a deep learning problem. But when they generate a lot of data and they use it to make intelligent decisions, that's when AI comes into the picture," he says.

Chiranjib Bhattacharyya, Professor - Department of Computer Science and Automation at the Indian Institute of Science, given his expertise on the technicalities of AI, is a tad more forthright. He minces no words when he says what we call AI today is actually not AI.

> AI is all about learning from experience, and we're not there yet. What we're seeing today is the first instance of data-driven modelling. We're nowhere close to a state where AI can gauge human emotions.

Chiranjib Bhattacharyya
Professor - Department of Computer Science and Automation, IISc

“AI is all about learning from experience, and we're not there yet. What we're seeing today is the first instance of data-driven modelling. We're nowhere close to a state where AI can gauge human emotions," he opines.

## This is what actual AI looks like

To illustrate real use cases of how artificial intelligence is being deployed in the industry, we take the example of how Shell India uses AI to identify the right kind of molecules that could potentially be used as catalysts. The petroleum giant also uses AI to automatically detect specific patterns in images and combine that with plant operations to bring in increased efficiency.

Explaining the process, Shrirang Karandikar, GM - Projects and Technology at Shell India, says that to analyze a system of molecules that has around 50 to 60 atoms, it's confined to an area of a few nanometers. Now the time taken to analyze the cluster of molecules and interaction between atoms could take up to eight to ten weeks.

"What we've done is we've simulated a system of molecules using AI. If a machine learning algorithm can tell you the right kind of candidate molecules to use in a matter of days and not weeks, the financial implication of an application like this could be huge," reveals Karandikar.

> What we've done is we've simulated a system of molecules using AI. If an ML algorithm can tell you the right kind of candidate molecules to use in a matter of days and not weeks. The financial implication of an application like this could be huge.

Shrirang Karandikar
GM - Projects and Technology, Shell India

Moving over to a completely different sector, we take a look at how e-commerce giant Myntra deploys AI to identify precisely what customers want. Myntra started experimenting with AI systems that recognized designs, patterns and colors to produce clothes that met popular demand.

Vishnu Makkapati, architect at Myntra says that the way they catalog products is also based on deep learning. "This gives better recommendations, based on user demographics. Another interesting area of deep learning –generative adversarial networks– is being used to design t-shirts that are likely to sell well," he reveals.

Additionally, the fashion front-runner also trawls Instagram, Pinterest, and fashion publications to add to its data pool.

**Related Feature**

How to manage IT risk without killing innovation

A global CIO's framework for building a change-ready, growth-minded ICT team

Why data analytics initiatives still fail

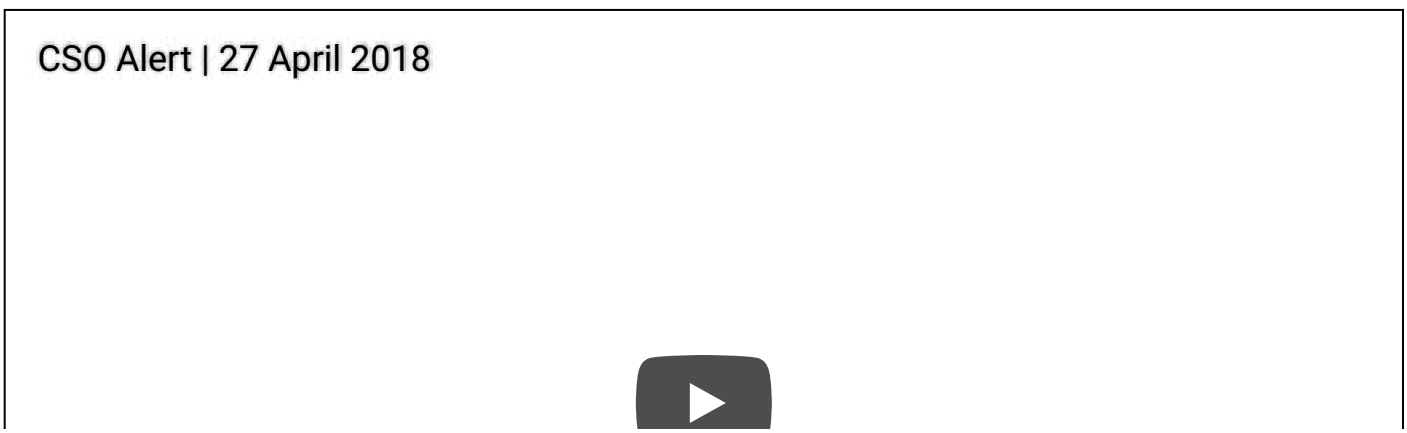
10 online data analytics bootcamps to boost your career

New AI tools make BI smarter — and more useful

Cisco boosts IoT access control, management

BACK TO FEATURE

**CSO Alert | 27 April**



## All about AI

New AI tools make BI smarter — and more useful


6 reasons to pump the brakes on AI


The thin line between high performance computing and AI

Is your vendor being honest about AI?

## From Our Contributors

Top 10 priorities that will help Indian companies to embrace GDPR

Top 3 data center trends to watch out for in 2018

Privacy and the right to be forgotten: Are we really ready?

Blockchain: The growth-driving technology

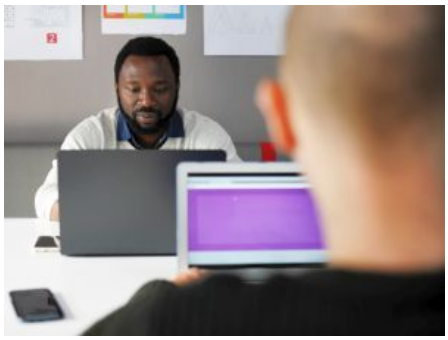
## Features

Customize your benefits to improve IT talent retention


11 bad hiring habits that will burn you

What is hybrid cloud really, and what's the best strategy?


Culture versus technology: What’s your priority to deliver the future of IT?



What is change management? A guide to organizational transformation

Cloud migration: The pros and cons of a common platform

## View From the Top

Trust makes the multi-cloud and AI worlds go round: Deepak Pargaonkar, Salesforce

Countdown EU-GDPR: A quick recap of how to ensure compliance from day 1

What tec
away fro
storm: Pa