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Explaining the unexplainable: What's the deal with deeptech?

Do you understand what deeptech is? After finding that few people understood his industry, Ofri Ben Porat, cofounder of Edgify, decided to write a children's ebook about it. Here, he explains his choice in approach.

A big – and crucial – part of life as a CEO and cofounder of a deeptech company is explaining to other people what we do, whether that be investors, friends, audiences or customers. Journalists always ask tech founders to tell them what their business does "so someone in a pub could understand it".

But there are things that are almost unexplainable, concepts you can't distill easily into a short sentence that every relative or person propping up the bar will get.

I don't claim to be the guy with 20 years' expertise and academic rigour, a PhD, and a history of filing unfathomable patents: that's my cofounder.

I'm just the one who burns shoe leather – or faces hours on Zoom every day

now – pitching what the geniuses behind me have created.

When you look at the rise of startups and scaleups in deeptech in the UK, it's pretty staggering, so I'm sure I'm not alone now in trying to explain the 'unexplainable'. The UK is known for its R&D and is increasingly becoming a science superpower, with emerging projects born from deeply complex problems that can only be solved using technology, science and engineering.

According to *Dealroom* data, investors pumped £3B into UK's deeptech startups in 2020, up from £2.5B in 2019. While the UK led Europe in deeptech investment by amount, France, Israel and Germany each boasted deeptech investment of more than a billion pounds in 2019, and there are no signs of it slowing down.

Deeptech is booming but no one understands it

Typically deeptech startup companies are those with the expressed objective of providing technology solutions based on substantial scientific or engineering challenges: think quantum, AI, blockchain and robotics. In our case, *Edgify* uses a distributed and collaborative framework helping AI train directly on edge devices that could transform retail, medicine and autonomous driving. Sound complicated? It is.

Every one of these edge devices produces so much data that it would take days to upload it to the cloud, label it, analyse it, train the model, then download improvements back onto the devices. Even then, it would be impossible to work with the entirety of the data produced – which inevitably impairs accuracy.

These edge devices then effectively share the learnings within the local network – such as a supermarket's self-checkout machines – helping them learn from one another without relying on a centralised cloud to store the information.

This process, often mislabeled as 'edge computing' (the correct realm is federated learning, but that is a mouthful), is a strand of deep tech that is transforming the way AI models are formed and their relationship with the cloud. I'll assume, given this publication's audience, you got that, right?

Edgify cofounders Ofri Ben Porat and Nadav Israel © Edgify

Is the mystery of deeptech part of the allure?

Some people love the shiny thing they don't quite get, because it sounds amazing. Take *quantum computing* as an example of really complex technology and something of a holy grail in engineering circles that has seen major breakthroughs in recent years: not to mention many VCs have made a killing from it.

And yet, it remains a complete mystery to almost everyone. Responses range from, "I don't get it" to attempts to get a deeper understanding of what underlying laws of physics are actually at play here.

> *The hope in quantum is that the result of the scientific magic taking place will mean it doesn't really matter to the ultimate beneficiaries.*

How many of us bother to dwell on how we are watching something on TV that is reaching us via satellite? But to investors and the corporate decision-makers buying into your stuff, they need more than a modicum of understanding.

The solution: a children's book

After several failed attempts to explain what I do, not only to family and friends, but professionals at conferences for machine learning specialists, I decided it was time to do something about it.

The book, '*Edgify – A New School of Thinking in AI Training*', was born after I tried to think of the most simplistic tools for education. Why not truly go back to basics?

The story follows Goldie the fish as she and her friends are trying to cross the ocean to a coral paradise using the concepts of federated learning as a method for collaboration. The book introduces a group of fish who share information to make better decisions democratically – just like an edge training AI framework.

My favourite character in the book is Goldie's nemesis, Malwareon, an

enormous and terrifying squid, wearing Guy Fawkes mask popularised by Anonymous Group to signify the inherent risks of entrusting data to the cloud, where it is more susceptible to hackers.

What’s next for explaining the unexplainable

For me, the book is an important step in starting this transition in our relationship with ‘explaining the unexplainable’. It might seem trivial, but sending a book to potential investors to read to their children has really helped formulate much more in-depth conversations about the product.

Whilst the industry continues to take strides in developing world changing technologies, we need to understand the implications of them.

I am not suggesting everyone write a children’s book, but that people spend time on working out ways to encourage conversation around their technology. After all, metaphors, analogies, and anecdotes are wonderful things. Use them intelligently in the right circles and you’ll see the results.

Ofri Ben Porat is cofounder of *Edgify*.

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