Europe Edition

Further

apart,

but stronger,

and

better.

Together.

Google for Startups

Yearbook 2020

Driving AI to big industry

Osas Omoigiade tells us how we can save the environment by applying AI to steel production.

> " For every tonne of steel produced, two tonnes of CO2 is generated. Since steel production is set to rise, humanity has a moral obligation to curb the environmental impact "

What problem is Deep.Meta Solving?

The problem we're solving is underpinned by our contrarian view — most people think the iron age is over, we believe that it is stronger than ever.

Humanity has defined 'Ages' throughout time by stone, bronze, iron... now, information. However, the rise of another does not preclude the continued evolution of what came prior. Today, 1.8 billion tonnes of steel (an iron alloy) is produced every year and this is set to increase as the world population grows, and nations, particularly in Africa, build their infrastructure. This is because steel is integral in modern society, from the highrise buildings we live in, to transportation and the national grid. Despite the fact it is so widely used and that we've been producing it at scale for the past 150 years, 25% of steel made is wasted due to errors in production, costing £1m for

every 1% lost. The results are downtime in production, damage to assets and resulting steel scrap which needs to be remelted to be useful again leading to additional CO2 pollution.

How is Deep.Meta solving this?

Most modern steel mills are already fitted with advanced sensors that generate data which can be used to resolve these production issues. Imagine how evidence from a crime scene is used to identify a culprit and their underlying motives. In the same way, Deep.Meta's machine learning software harnesses extracted data to reveal hidden patterns in production. This helps customers to detect the source of these production errors and eventually be able to predict them before they happen.

It's imperative we are reducing steel scrap resulting from these production errors because

for every tonne of steel produced, two tonnes of CO2 is generated. Since steel production is set to rise, humanity has a moral obligation to curb the environmental impact.

Is the attitude of heavy industry to AI changing? I spent 4 years of my PhD working with steel producers to advance manufacturing methods, during which I learned their approach to problem-solving tended to be conservative.

Some academics have jokingly shared "Steelmaking is two industrial revolutions behind!" However, an increasingly competitive steel market has rendered investment in expensive new machinery to gain a commercial edge economically unjustifiable. This has been coupled with progressive policy changes which redirects more of the environmental costs to the heavy CO2 polluters, like the steel industry. So steel

producers are considering optimizing the capacity of existing machinery — and while machine learning and AI provide such a solution, they are not able to attract the people with the skills to harness it.

This is why Deep.Meta is working with some of the World's top 10 largest steelmakers. The combination of my background in steel manufacturing and my cofounder Aizar's, another Imperial PhD, expertise in Quantum Computing and machine learning allows us to make this technology accessible to the steel industry with minimal fraction.

What does Deep. Meta 2.0 look like?

An obvious next step for Deep.Meta is to turn our attention to new metals which share some similar production routes to steel such as aluminium and copper. However, a not

so obvious ambition of ours is to leverage steel's ubiquitous use in society. We want to expand our expertise monitoring minute changes on production lines to increasingly broader aspects of the supply chain. Since steel is so widely used and is the most recycled metal on the planet, closely monitoring it can provide never-before-available insights about the other materials used alongside it, from cradle to grave. These materials could be concrete in highrise buildings or plastics used for the body of a washing machine. This will become a means of monitoring products or structures and hence their lifetimes — a concept we've termed 'iron-dating'.

This kind of information will allow societies to more accurately predict supply chain behaviour and materials' lifecycles, and subsequently to more effectively plan cities and allocate resources.

THE BLACK REPORT.

10 X 10
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The Black Report is written by Anika Henry and Andy Davis, it is the first qualitative deep-dive into pre-seed Black founders and their journeys.

These startup stories are ones of hard work, resilience, and success. While almost half of the founders started off alone, and just over one fifth had access to friends and family rounds, so often critical to fund the early stages of their ventures, they managed to raise on average £166k. These funds not only fuel the growth of their businesses, but create much needed employment, with these startups creating, on average, 5.4 jobs, almost half of which were taken by women.

Dive into the stories
theblack.report

An African Proverb

If you want to go fast, go alone. If you want to go far, go together.

43% solopreneurs

22% raised from Friends & Family

£166k average amount fundraised

46% female team members

5.4 average jobs created

77% generating revenue