Artificial Intelligence and Learning

An Opportunity for the Arab World

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Outline

- Presenter introduction
- The mega trends
- The impact of AI
- AI in education/learning
- Opportunity for the Arab World

2007: An Inflection Point. What Happened?

- Apple launched the iPhone
- Facebook went global
- Twitter went global
- Kindle and Android were released
- Airbnb was founded
- Google bought YouTube
- IBM created Watson (the first AI platform)

and ……. Software began to eat the world

Thomas Friedman Book: *"Thank you for Being Late"*

What Happened Since 2007?

- 3D printing
- 5G wireless networks
- Robotics
- Hyperscale data centers
- Electric and autonomous cars
- AR, VR, and wearable sensors
- Personalized medicine
- Bit coins and blockchain
- Quantum computing/Comm.
- Digital transformation
- Machine learning
- **Artificial Intelligence**

Some Examples ……

And The Internet Joined the Tera Era

Tera: 1,000,000,000,000

The Future of Internet: 301 Terabits Per Second!

Mario Alvirez

Sales Manager @Candid8 - Founder @Virtual Pros Sales Development Specialists

Published Jun 5, 2024

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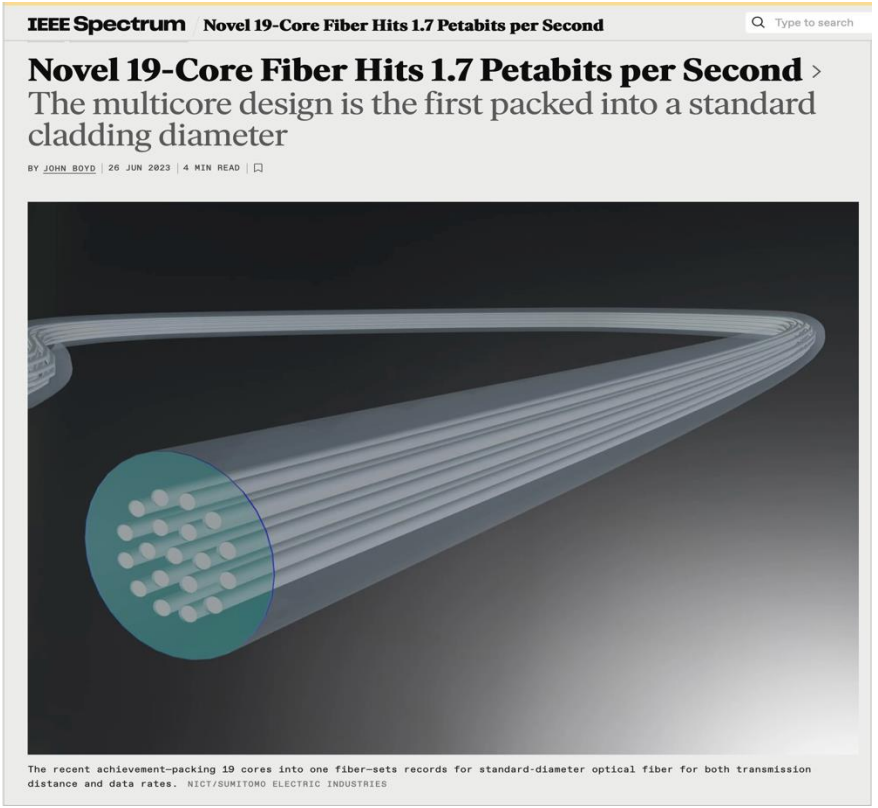


IEEE Spectrum | Novel 19-Core Fiber Hits 1.7 Petabits per Second

Type to search

Novel 19-Core Fiber Hits 1.7 Petabits per Second ›

The multicore design is the first packed into a standard cladding diameter

BY JOHN BOYD | 26 JUN 2023 | 4 MIN READ |

The recent achievement—packing 19 cores into one fiber—sets records for standard-diameter optical fiber for both transmission distance and data rates. NICT/SUMITOMO ELECTRIC INDUSTRIES

Humans Are Hungry for Bites: Mobile Phones in the Tera Era

- **Tera**bit/s communication
- **Tera**bytes storage
- **Tera**flops computing

Electric Cars iPads on Wheels

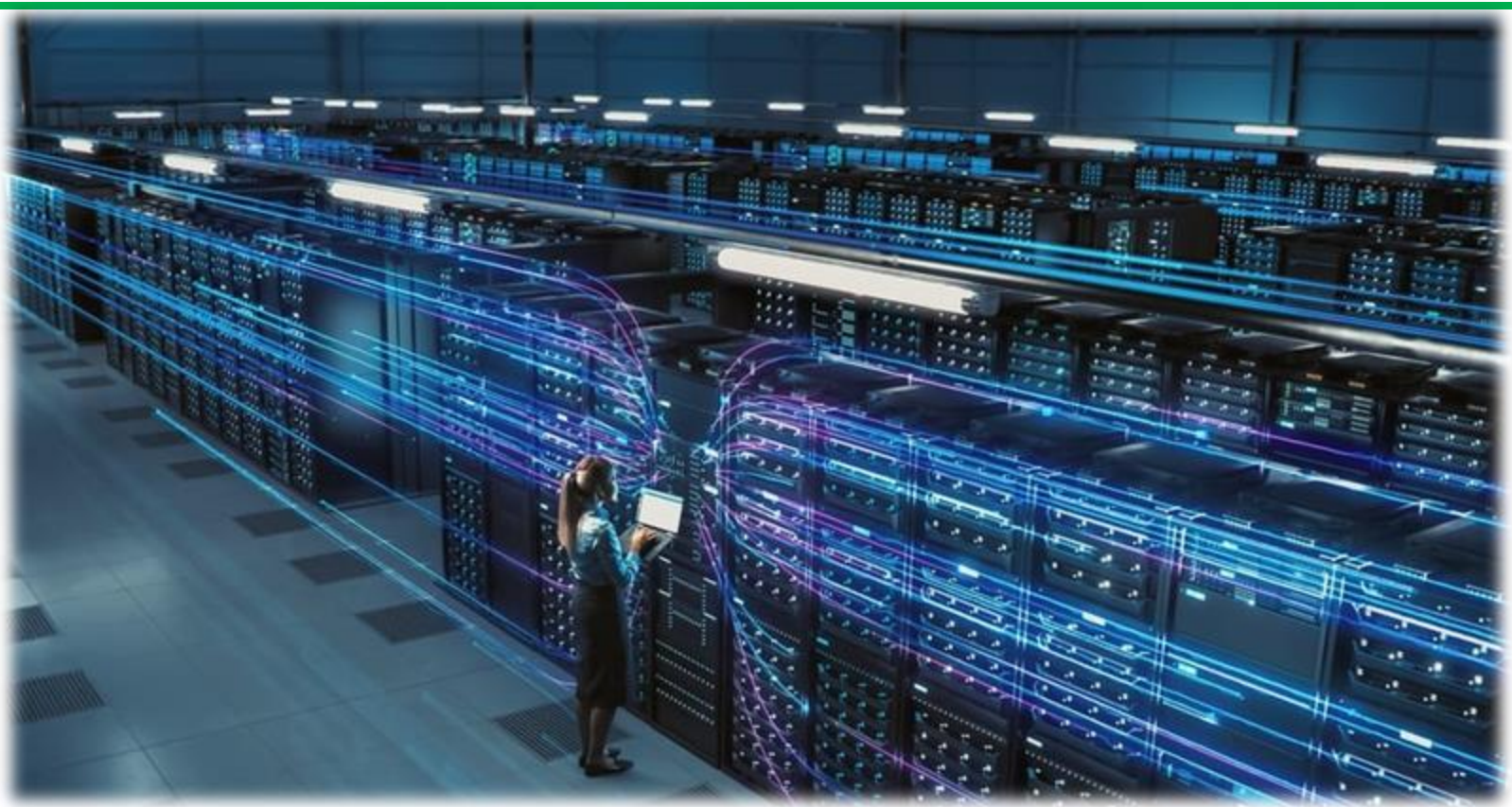
You Will Spend the Best Time of the Day in Your Autonomous Car

And you will be consuming 4 Tera Bytes per day every day

Microsoft Project Silica:

Superman movie: tape and glass comparison

Exabyte Hyperscale Data Centers



Stargate …….

A New AI Company with **$500B** Committed Investments

1 of 11 | Hours after returning to the White House, President Donald Trump made a symbolic mark on the future of artificial intelligence by repealing former President Joe Biden's guardrails for the fast-developing technology.

20 data centers

50,000 square meter each

First Applications

Electronic Medical Records

and

Cancer research

DeepSeek

A Chinese artificial intelligence company called DeepSeek is grabbing America's attention – and sending a shock wave through Wall Street – due to its new tech, which some experts say rivals that of OpenAI's ChatGPT.

DeepSeek is also catching investors off guard because of the low development costs for its AI app, which Wedbush Securities analyst Dan Ives pegged at only $6 million. By comparison, OpenAI, Google and other major U.S. companies are on track to invest a total of roughly $1 trillion in AI over the coming years, according to Goldman Sachs.

Who is behind DeepSeek?

DeepSeek was founded in December 2023 by Liang Wenfeng, and released its first AI large language model the following year.

Not much is known about Liang, who graduated from Zhejiang University with degrees in electronic information engineering and computer science. But he now finds himself in the international spotlight.

He was recently seen at a meeting hosted by China's premier Li Qiang, reflecting DeepSeek's growing prominence in the AI industry.

Unlike many American AI entrepreneurs who are from Silicon Valley, Mr Liang also has a background in finance.

He is the CEO of a hedge fund called High-Flyer, which uses AI to analyse financial data to make investment decisons - what is called quantitative trading. In 2019 High-Flyer became the first quant hedge fund in China to raise over 100 billion yuan ($13m).

In a speech he gave that year, Liang said, "If the US can develop its quantitative trading sector, why not China?"

In a rare interview last year, he said China's AI sector "cannot remain a follower forever".

He went on: "Often, we say there's a one or two-year gap between Chinese and American AI, but the real gap is between originality and imitation. If this doesn't change, China will always be a follower."

Asked why DeepSeek's model surprised so many in Silicon Valley, he said: "Their surprise stems from seeing a Chinese company join their game as an innovator, not just a follower - which is what most Chinese firms are accustomed to."

And AI Started to Make Major Impacts

- Healthcare
- Education & Learning
- Finance
- Information Systems
- Climate changes
- Transportation
- Manufacturing & Automation
- Security
- Collaboration & Innovation

Simply … Every aspects of our daily lives

AI in Healthcare

- There is no doubt that societies with healthy people (children, adults, seniors) are more productive that societies with healthcare issues.

- Even if you don't go to the doctor, **AI will diagnose diseases based on symptoms by reading data from a fitness band or a person's medical history, analyzing the pattern, and suggesting appropriate individualized medication, which can be ordered easily through cell phones, and not cause any side effects**.

https://www.simplilearn.com/future-of-artificial-intelligence-article#:~:text=AI%20is%20predicted%20to%20grow,necessitating%20new%20positions%20and%20skills.

My Physician: Wearing a Google glass, recording videos, and reporting to her scribe in a different continent

AI Helped Anal

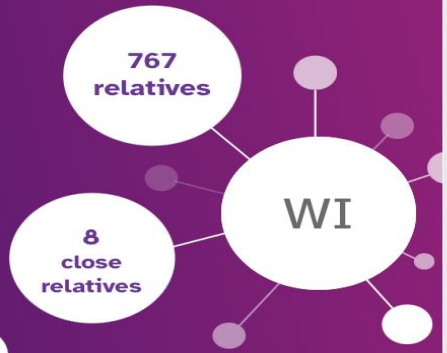
Family Tree

Get started with your predicted relationships, then fill in y

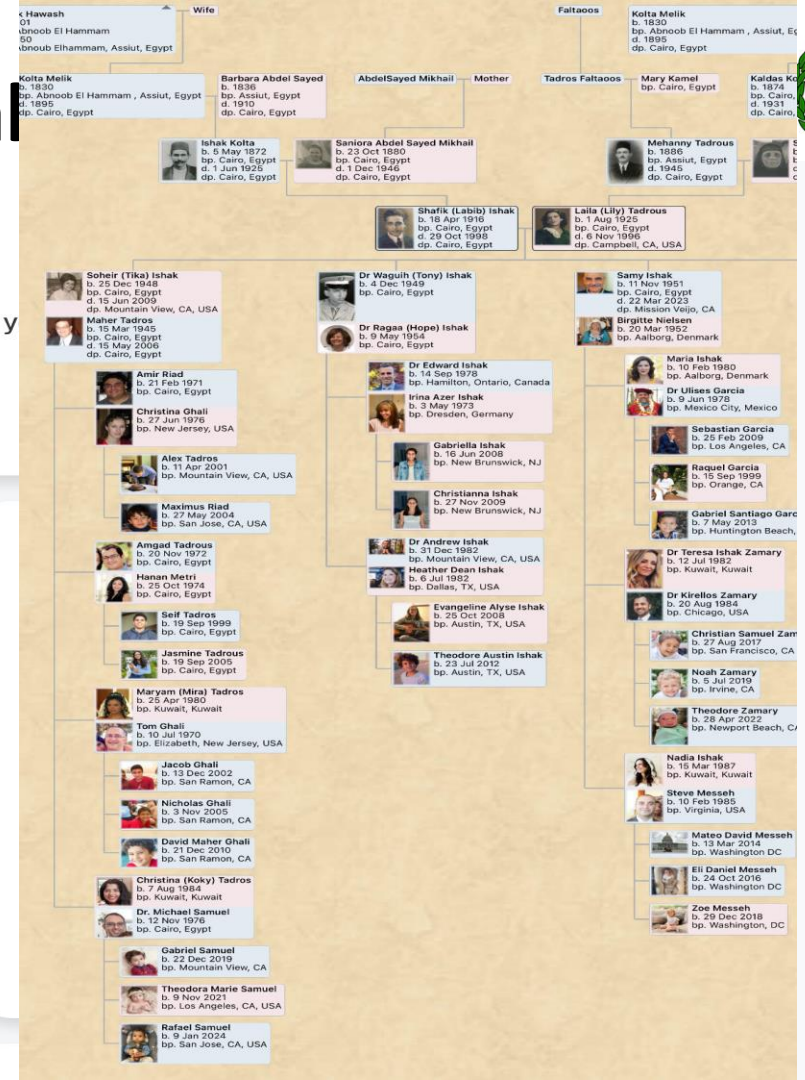
View your tree

DNA Relatives List

You share DNA with **767** other 23andMe customers.



See all relatives



AI in Transportation

- By 2025, 80% of new cars will have AI technology embedded in them.

- **Connected vehicles have predictive systems that reliably inform drivers of potential spare component failures, route and driving instructions, emergency, and disaster preventive procedures, and more**.

https://www.simplilearn.com/future-of-artificial-intelligence-article#:~:text=AI%20is%20predicted%20to%20grow,necessitating%20new%20positions%20and%20skills.

My Car: Takes me from home to the final destination and stopping at the appropriate charge stations along the trip

AI in Education

- The level of education received by youngsters determines a country's progress. Manufacturing industries no longer require skilled labourers, as robots and technology have mostly replaced them.

- **AI will change traditional schooling in the future**.

- The educational system has the potential to be very effective and tailored to an individual's personality and abilities. **It would provide opportunities for brighter pupils to shine, as well as a better opportunity for struggling students to cope up.** On the one hand, proper education may strengthen individuals and nations and improper education can have disastrous consequences.

https://www.simplilearn.com/future-of-artificial-intelligence-article#:~:text=AI%20is%20predicted%20to%20grow,necessitating%20new%20positions%20and%20skills.

AI in Robotics

AI in robotics has automated several industries using industrial-grade robots combined with artificial intelligence. AI has revolutionized these industries by shifting complex, resource-intensive, and laborious tasks to machines that can operate for long hours and with high precision. Examples:

- The **agriculture sector** utilizes modern technology to improve process efficiency and increase crop yields. They helps farmers understand weather conditions and advises them on using fertilizer, water, and the time to harvest.

- Robots have been used in the **manufacturing industry** for decades. They perform tasks like assembling, welding, packaging, and shipping with great precision and efficiency.

https://www.v7labs.com/blog/ai-in-robotics

AI in Robotics

- Intelligent robots in the **healthcare sector** perform various tasks on hospital premises, from the distribution of equipment and patient assistance to performing surgical procedures.

- AI robots can be used for the **household sector** for cleaning, security, or a walking assistant for basic tasks.

- AI robots are also widely used in the **aerospace industry** for space exploration. NASA's Perseverance Rover has specialized cameras and an artificial intelligence unit that helps it better explore Mars's surface.

https://www.v7labs.com/blog/ai-in-robotics

Smart Robots Cleaning the House

التعليم والصحة
وحفظ الهوية واللغة

The AI revolution is leaving Arabic speakers behind

Amal El Mekki

28 April 2023 08:55 BST | **Last update:** 1 year 8 months ago

The vast majority of references and big data AI tools such as ChatGPT scan to generate results are in English. This must be addressed if we are to avoid a digital language divide

When I started using ChatGPT-4, I realised that my fears had already been realised. The battle is now raging, and the Arabic language has not been "invited to participate".

As a journalist and trainer interested in artificial intelligence, I cannot help but notice how today's artificial intelligence tools are revolutionising the content industry, research and communication channels.

However, I also regretfully note how these same tools of change reveal a deep linguistic chasm that leaves speakers of Arabic at a disadvantage compared to their English-speaking counterparts.

My Suggestion: *The Arab World Should Focus on*

(1) EDUCATION *, (2) HEALTHCARE, (3) PRESERVING IDENTITY, (4) RESOURCE MANAGEMENT*

- Most AI applications (Automation, Transportation, etc.) require massive infrastructure and large investments. The Arab World is lagging in these applications but will benefit one way or another.

- The **situation is different** in the application of **AI in learning and education**:
  - Most of the western states have strong educational systems which might have the drawback of resisting changes to the system.
  - Most of the Arab states have reasonable educational systems which means there is a lot of room for improvements.
  - There are clear disparities between the education systems within the Arab states and even within various regions of the same state.
  - AI is revolutionizing industries, but its role in learning is less explored.

My Suggestion: *The Arab World Should Start by Leveraging AI in EDUCATION*

- As of 2023, the combined population of all the Arab states was around 473 million people and is characterized by a significantly young population (15-30 age range), often referred to as a **"youth bulge";** highlighting the predominantly **youthful demographic in the region.**

- Most probably, the infrastructures needed to leverage AI in education are much more affordable than other applications.

- The above observations represent **a golden opportunity for the Arab** World to focus a strong effort on leveraging the benefits of AI in education & learning with the goal of creating new knowledge and practices, removing biases and creating a strong work force with excellent chances to compete globally.

Education & Workforce Development

AI can revolutionize education in the Arab World, where improving access to quality education and aligning skills with the job market are pressing needs:

- Personalized Learning Platforms
- Language and Literacy Support
- Reskilling and Upskilling

- **Why It's Critical:**
  - Many Arab countries face high youth unemployment rates and skill mismatches.
  - Rural and underserved communities often lack access to quality education and resources.
  - Bridging the gap between traditional education systems and the digital economy is vital.
- **Impact:**
  - Increased literacy rates and access to quality education.
  - A workforce prepared for future technologies, addressing youth unemployment.
  - Empowerment of marginalized groups, such as women and rural populations.

Driving Innovation and Collaboration

- Universities leverage AI to address regional learning challenges.
- Partnerships enhance access to advanced EdTech tools.
- Encourages innovation in education tailored to local needs.

Two Objectives for Learning

- Objective 1: Sharing existing knowledge and practices.
  - Existing focus: Training programs to share existing knowledge.

- Objective 2 **(Bold)**: Creating new knowledge and practices.
  - Discovering new ideas, patterns, and relationships.
  - Innovating practices to deliver greater impact.

https://medium.com/@jhagel/artificial-intelligence-and-learning-the-white-space-to-be-explored-642cd9e681ab

Key Barriers to Creating New Knowledge

- Personal Fear:
  - Limited experience in creating new knowledge.
  - Fear of effort, risk, and uncharted territories.

- Institutional Resistance:
  - Focus on scalable efficiency.
  - Resistance to curiosity, creativity, and collaboration.

https://medium.com/@jhagel/artificial-intelligence-and-learning-the-white-space-to-be-explored-642cd9e681ab

Call to Action (THE TIME IS NOW)

- **The Vision:**
  - Shift emphasis to the second **(bold)** learning objective.
  - Leverage AI to accelerate innovation and create value.
- **Next Steps:**
  - Overcome barriers to adopting new approaches.
  - Build ecosystems to cultivate diverse and impactful networks.

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Thank You