THNQ: Investing in Artificial Intelligence

Artificial intelligence: The most disruptive technology since the internet era

The advent of artificial intelligence (AI) is disrupting every organization, industry groups, and all aspects of our lives. The race to acquire top AI startups began with technology leaders such as Alphabet, Apple, Meta, and Microsoft dominating the space. Now, even non-technology giants such as Ford and John Deere are making AI-related deals and building out their own AI infrastructure. In fact, the majority of the top ten S&P 500 companies are where they are because they have been heavily investing in AI and machine learning systems.

Many of these companies cannot exist without AI. In healthcare, digital imaging technology powered by AI is detecting cancer better than a trained physician. In agriculture, farmers are relying on deep learning techniques to improve crop yields or they will cease to exist. Smart sensors and appliances in the home allows us to order everything from groceries to movies with the touch of a button. As AR/VR technology matures and prompts us to immerse ourselves in an increasingly virtual world, video game publishers are harnessing the power of the cloud and AI to create a personalized virtual experience from any mobile device with limited hardware. Future applications of AI are anticipated to help make our lives easier and more efficient.

We are on the cusp of creating new winners and losers in every industry that AI touches. We see AI impacting every corporation, industry, and segment of the economy over the coming years. Enterprises that fail to invest in AI will lose out to the early adopters of who will benefit from the productivity gains and capital efficiencies they will create.

Our classification of applied AI technologies includes machine learning; deep learning; advanced computer vision, which is key to autonomous vehicles and surveillance systems; predictive analytics applied in cybersecurity and fraud detection; natural language processing (NLP), which includes speech recognition; and natural language understanding, which is a building block for virtual agent (chatbot) technology. Additionally, this includes the underlying infrastructure that enables this technology to exist and understand the world in the first place, such as semiconductors, networking, cloud, sensors, and deep learning models.

What is AI?

Artificial Intelligence is a branch of computer science that focuses on making machines imitate intelligent human behavior by making informed decisions with little to no human intervention.

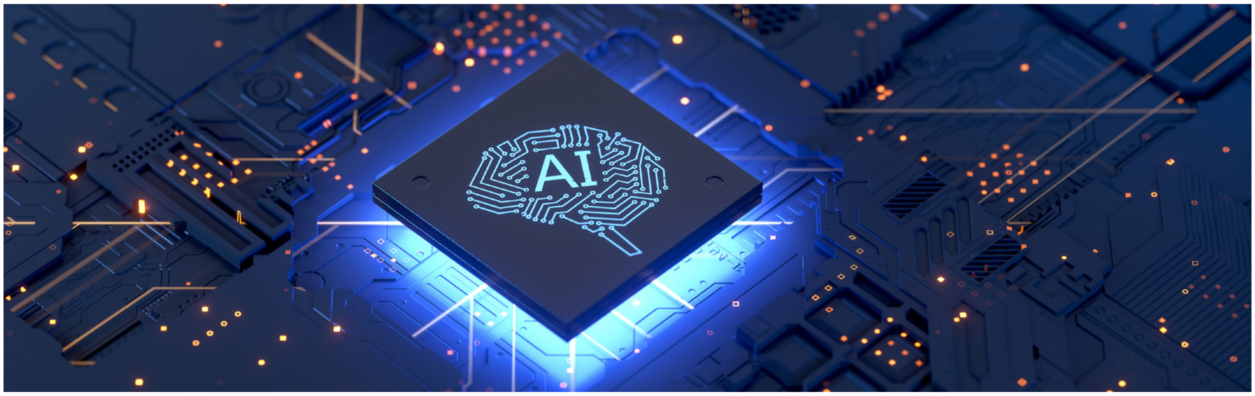
Why now?

AI adoption is growing at an unprecedented rate thanks to the rise of machine learning algorithms and deep learning networks that are unlocking more out of data than ever deemed possible.

Every two years, we create more data than we've created in all of history. We need massive amounts of computational power and scalable storage to manage all this data created by smart devices and apps. Existing infrastructure is not equipped for this digital transformation we are experiencing.

What's fueling the AI revolution

- Unprecedented growth and availability of data
- Rapid innovation and breakthroughs in chip processing power
- New infrastructure framework is going built by industry leaders
- Major transformation of the labor force



The world around us is changing, transforming how we work, play, and live our daily lives. This makes AI potentially one of the greatest investment opportunities of our generation. While the field of AI has been around since the 1950s, it has recently begun to move from the experimental phase to commercial application. Historically, the stock market tends to under-appreciate the scale of opportunity enjoyed by leading providers of new technologies at this phase of development. AI is both disrupting and forcing us to rethink the world around us.

Artificial intelligence is creating value across all industries. Companies such as Amazon and Alphabet are employing AI across all of their businesses, ranging from cloud hosting services and recommendation engines to fraud detection and personal assistants. Microsoft has not stopped its shopping spree of AI companies; for example, their $20 billion acquisition of Nuance spotlights their intention to go after helping automate and support the healthcare industry.

The era of hypercompetition

Corporations and governments around the world are building information infrastructure to prepare for a hypercompetitive world. Autonomous driving, 5G wireless networks, smart power grids, virtual personal assistants, and virtual reality video games are some of the intelligent infrastructures seeing heavy AI investment. Recent advances in the field are propelling investments in these new technologies to stay competitive. The ability to embrace and leverage AI is already creating a competitive advantage for companies. Investors should look to companies that are building and utilizing these technologies to find growth opportunities.

Investing in the universe of AI

At ROBO Global, we recognized the robotics, automation, and artificial intelligence (RAAI) revolution was coming early on, becoming the first investment product to market in 2013 to capitalize on this technological era of epic proportions. In

AI & machine learning spending will grow from:

$70B in 2020 to **$365B** by 2025

monitoring the publicly traded universe of enablers of artificial intelligence over the past several years, we couldn't help but recognize the massive shift that was occurring. That is why we created the ROBO Global THNQ Index, the first investment index dedicated to delivering true exposure to the world of artificial intelligence.

Brought to you by the minds behind the original robotics and AI investment portfolio, ROBO Global is the creator of the ROBO Global Robotics & Automation Index series, which provides comprehensive, transparent, and diversified benchmarks representing the value chain of robotics, automation, and artificial intelligence.

With the expertise of our leadership team and strategic advisors who are technologists and thought leaders in the field, we help investors capture the growth and return opportunities presented by this megatrend. Our indices are used by a variety of investment vehicles listed on multiple exchanges around the world.

Early adopters in digital transformation are already creating competitive advantages, and the gap with the laggards looks set to grow. For investors, the most important thing is to keep an eye on the end goal and gain broad exposure to the many different sectors set to grow thanks to AI in the coming years.

Differentiated strategy

At ROBO Global, we dug into AI technology, its history, and its many applications. Our research-driven approach leverages our deep technology expertise, industry relationships, and extensive experience identifying businesses leading the AI revolution.

Inclusion criteria

- **Companies with the highest revenue purity derived from selling AI products and services.**
- **High level of investment and resources allocated to AI, such as research and development M&A and talent acquisition.**
- **Companies must fit within our defined AI universe subsector classification system.**
- **Pioneering and established market leadership within the artificial intelligence landscape.**

Conclusion

There are many compelling arguments to invest in basket of global artificial intelligence stocks:

- Artificial Intelligence (AI) is poised to disrupt every company, organization, industry, and segment of the economy.
- To survive, just about every firm will need AI.
- AI is already impacting just about every industry. It is improving crop yields in agriculture, outperforming trained physicians in healthcare, and becoming an increasingly vital tool for most professionals.
- The rate of growth for AI adoption is already explosive and going to move even faster thanks to machine learning and deep learning.
- Corporations and governments are preparing for an era of hypercompetition and investing heavily in the technology that will make or break them: AI.
- Early adopters that embrace digital transformation will have competitive advantages and be the companies that will lead in the future.

To learn more about VettaFi Indexing click here

VettaFi

About VettaFi

VettaFi is a differentiated index provider, helping asset managers across the globe build and grow their product suites. With an industry-leading index platform, VettaFi partners with issuers to develop innovative investment solutions and bring them to market. VettaFi's portfolio of investor-oriented media publications and events connects clients' products with investors. This robust ecosystem enables asset managers to effectively reach their target audience, whether digitally or in-person.

Significant investments and the backing of TMX Group have further strengthened our ability to help our partners by expanding our capability set and geographic reach.

Our combined strength and entrepreneurial spirit empowers us to deliver the specialized insights and services that enable asset managers and investors to achieve growth and success.

VettaFi owns and administers the ROBO Global Index Series. For more information, please visit: www.vettafi.com.

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