

Artificial Intelligence Opportunities



The Artificial Intelligence (AI) Concept

- **AI** is defined as the ability of a computer program or a machine to think and learn. As such AI started back in 1956 at "The Conference in Dartmouth", which was more of a summer workshop where researchers gathered and exchanged ideas and practices on what was for the first time labeled "Artificial Intelligence".

The AI community saw three stages in the evolution of AI:

- **Artificial Narrow Intelligence:** where the learning skills are limited in scope to one field: geometry, algebra, languages.
- **Artificial General Intelligence:** where several fields are covered and harness the power of reasoning, abstract thinking, problem solving on par with the human race. This is the stage at which current research has arrived.
- **Artificial Super Intelligence:** where human intelligence is surpassed. This stage might be attained in several decades.

The Artificial Intelligence (AI) Applications

The use of AI was accelerated by growth of data gathering allowing for AI algorithms to crunch huge quantitative feeds and improving as the data gets even bigger.

Energy: AI can assist in regulating utilities to optimize energy production and storage and managing the power grid more efficiently to name just a single application.

Financial Services: Predicting customer preferences. Productivity in KYC/Due diligence. Fighting cybercrime. Responding to customer queries. Accelerating credit analysis

Industry Manufacturing: Product and process engineering through the use of Computer Aided Design (CAD). Optimization of product management.

Healthcare: Diagnostics, triage and patient data analytics are already three major domains in which AI operates today.

Logistics: Automated warehouses where inventory is managed thanks to a predictive AI in terms of product demand. Also, AI supports transport consolidation and warehouse slotting and routing, and the management of procurement.

Pharmaceuticals: Drug discovery applied to individual genetics and other genomic analysis. Improving the drug supply-chain.

Transport: Mapping, autonomous vehicle, safety improvements.

Investment Issues with AI

Most of the AI companies which develop AI remain in the venture capital sector and are privately owned. Most AI development companies are also narrowly focused, making it a high-tech gamble since you're betting on the fact that the company will add value as an AI developer but also whether its sector of application (Fintech, Cloud, Transportation...) will thrive. So the only vector for participating in the AI growth is through ETF funds.

Here again, investors need to discern between general tech-funds and those focused solely on artificial intelligence. We should stress that ETF funds which invest in AI do so by investing in firms that use AI to accelerate productivity gains as much as companies that develop AI.

Investment Issues with AI

Pure play in AI developers can only be accessed via private equity and venture capital.

The ROBO Global Robotics & Automation ETF (ROBO) and Global X Robotics & Artificial Intelligence Thematic (BOTZ) both invests in global companies that are driving transformative innovations in robotics, automation, and artificial intelligence (RAAI), including companies that create technology to enable truly intelligent systems that can sense, process, and companies that apply those technologies to deliver RAAI-enabled products-including robots-to businesses and consumers.

The funds are large with Assets Under Management of \$1.4 billion for ROBO and \$1.28 billion for BOTZ with an expense ratio of 0.95% p.a. and 0.69% p.a. respectively.

Artificial Intelligence Funds ETF

ROBO & BOTZ



Robo Global Robotics and Automation Index ETF (ROBO)		Top 10 Holdings (%)			
Inception	10/21/13		Robot Corp.	1.79%	
AUMs MM	1,281.46		NVIDIA Corp	1.77%	
Holdings	91		Harmonic Drive Syst Inc	1.77%	
Expe. Ratio	0.95%		Hollysys Te	1.75%	
Beta	1.28		Koh Young Tech. Inc	1.75%	
Sharpe	0.82%		Cognex Corp.	1.74%	
Performance as of 12/31/2019		Performance YTD			
2019	29.51%	1-Year	29.51%	p.a. Krones Ag	1.72%
2018	-20.43%	3-Year	13.90%	p.a. Hiwin Tech. Corp.	1.67%
2017	44.17%	5-Year	10.60%	p.a. Yaskawa Electric Corp.	1.67%

Global X Robotics & Artificial Intelligence ETF (BOTZ)		Top 10 Holdings (%)			
Inception	9/12/16		NVIDIA Corp	7.70%	
AUMs MM	1,418.00		Keyence C	7.08%	
Holdings	37		Mitsubishi Electric Corp	7.00%	
Expe. Ratio	0.68%		FANUC Corp	6.95%	
Beta	1.15		Intuitive Surgical Inc	6.90%	
Sharpe	0.68%		ABB Ltd	6.78%	
Performance as of 12/31/2019		Performance YTD			
2019	31.67%	1-Year	31.79%	p.a. Yaskawa Electric Corp.	5.31%
2018	-27.79%	3-Year	14.27%	p.a. Omron Corp	4.84%
2017	58.84%	5-Year	-	- Daifuku Co Ltd	4.31%

ROBO vs. BOTZ

