AI & Machine Learning

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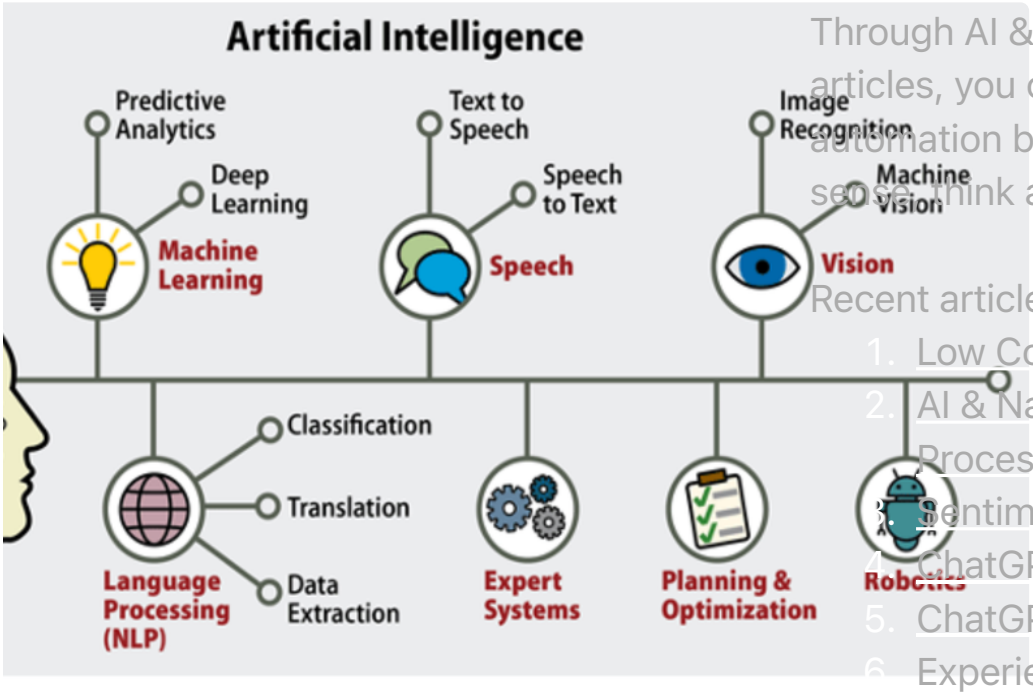

Through AI & Machine Learning articles, you can explore increased automation by enabling machines to sense, think and act.

Recent articles include:

1. Low Code / No Code (LCNC)
2. AI & Natural Language Processing (NLP)
3. Sentiment Analysis
4. ChatGPT
5. ChatGPT more info
6. Experience Writing with AI
   Intelligent Agents
   Overture Maps Linux Foundation Project: The Potential for Revolution in Navigation Technology
   The Power of Edge Intelligence and Tiny ML
   AWS Foundation Models
   AI21 Labs Writing Aid, Customizable LLM
   Latest Advancements of GPT
   Deep Reinforcement Learning

What is It?

Artificial Intelligence, "AI", enables machines to sense, "think", and act to solve simple and complex problems with data used to train them to mimic how humans model and solve problems - especially repetitive tasks that can be automated. Machines can also be taught to learn on their own with tools like natural language processing (NLP) and neural networks de-scribed as "deep (machine) learning."

How Does it Work?

AI and Machine Learning use data, models and algorithms to solve problems and learn on their own. The more training data, the better. Machine learning uses algorithms – like regression and neural networks – to "see" (in autonomous cars), recognize them (product recommendations) and take appropriate action (grant or deny a loan). They can also be taught how to process multiple languages (after interpreting spoken or written data).

What is the Competition Doing With It?

Vertex's competitors are using AI and Machine Learning to improve processes and automate existing and new products and services: Avalara Launches A.I. Tool to Streamline Tax Classifications & Sovos have invested to automate processes like tax compliance. New competitors – like Blue dot – are investing heavily in AI. Tax research companies like Walters Kluwer and Thomson Reuter's are using AI and Machine Learning to improve its research capabilities.
EY, Deloitte, PWC and McKinsey – among many others – all predict the huge impact AI and Machine Learning will have on corporate tax research, compliance, reporting and calculation.

What is the Potential Intersection With Tax?

The application potential for AI and Machine Learning includes natural language processing for tax data extraction, voice-to-text translation, recognition patterns

in scanned documents and scanned tax for data extraction. Machine Learning enables pattern understanding, financial balance and transaction account classification, reconciliation, and predictive modeling. Robotic process automation (RPA) performs structured tax configuration and compliance, cognitive automation assesses levels of tax risk, and deep Q&A enables large database searching and research and data gathering, documentation and support. These and other areas allow for new value and insights to be created as well as advance tax automation.

Next Steps

Vertex is developing an aggressive investment strategy in AI and Machine Learning. The market is expecting a strategy. A coherent AI and Machine Learning strategy will respond to the competition and feed the company's valuation model. The pieces of the strategy include calculation and compliance, tax research, customer support, and a set of pilots of how Vertex will apply AI and Machine Learning to enhance old and create new products and services. Descriptions of these pilot projects will be released soon.