

AI, IP and IBM

Augmented Intelligence, Intellectual Property & IBM



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Agenda

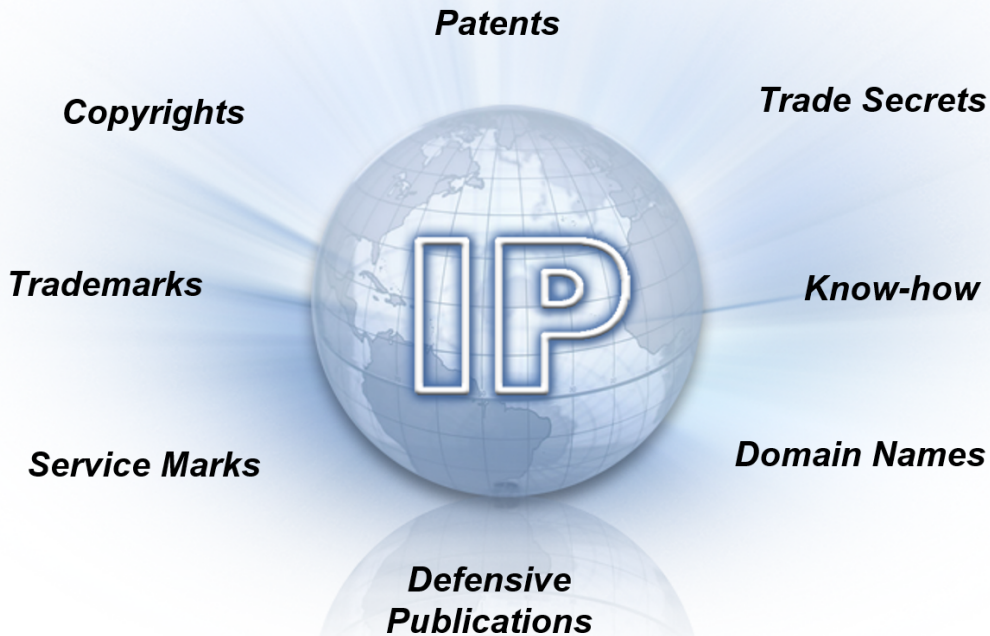


- What is Intellectual Property (IP)?
- IBM and IBM IP Organization
- What is AI?
- History of AI at IBM
- IP Issues: Today and Future
- How can Augmented Intelligence Help?
- How is IBM T&IP Leveraging AI?

What is Intellectual Property (IP) ?



Types of Intellectual Property



IBM and IBM IP Organization



- IBM T&IP (Technology and Intellectual Property) Organization is missioned to Develop, Protect and Monetize IBM Intellectual Property
- #1 in Patents issued for 25 consecutive years
 - 9,043 patents in 2017
 - Granted to more than 8,500 IBM researchers, engineers, scientists and designers in 47 different U.S. states and 47 countries
 - IBM IP
 - 675 Registered, 58 Pending Trademarks
 - > **63,000 Worldwide Active Patents** and > 25,000 Active Applications
 - Additional Trade Secret, Know How, etc....

What is AI at IBM?



- IBM Augmented Intelligence....
 - Not artificial or meant to replace Human Thinking..
 - Meant to augment human thinking

<https://www.ibm.com/blogs/nordic-msp/artificial-intelligence-machine-learning-cognitive-computing/>

What is AI at IBM?



- **Machine Learning**
 - Provides computers with the ability to continuing learning without being pre-programmed. Machine Learning is algorithms that learn from data and create foresights based on this data.
- **Artificial Intelligence**
 - When machines work “intelligently”.
 - By the use of Machine Learning, Artificial Intelligence is able to use learning from a data set to solve problems and give relevant recommendations.
- **Cognitive Computing**
 - Systems that learn at scale, reason with purpose and interact with humans naturally. It is a mixture of computer science and cognitive science.

History of AI at IBM



- **Arthur Samuel's checkers player (1950s)**
 - The first self-learning program
- **IBM RS 1 Robotic system (1980s)**
 - The RS 1 Assembled typewriters, had six degrees of freedom; its arm could move at speeds up to 40 inches per second, performed parts insertion and other intricate manufacturing operations. The software permitted the RS 1 to respond moment-by-moment to changes in its work environment.

History of AI at IBM



- **Deep Blue -- Computer Chess (1997)**
 - In 1997, the IBM chess machine Deep Blue defeated World Chess Champion Garry Kasparov in a six-game match.
 - The development of algorithms that focused IBM's computing power in an intelligent way, combined with a complex positional evaluation function, enabled Deep Blue to be successful.
- **Backgammon (TD-Gammon)**
 - Gerry Tesauro demonstrated that reinforcement learning (RL) could achieve spectacular success in complex real-world problems

History of AI at IBM



- **Watson (Jeopardy)**
 - Watson is a computer system like no other ever built. It analyzes natural language questions and content well enough and fast enough to compete and win against champion players at Jeopardy!
- **Watson**
 - Collection of APIs and Algorithms that enable users to rapidly develop AI Solutions

History of AI at IBM



Project Debater JUNE 2018

- Project Debater is the first AI system that can debate humans on complex topics. Project Debater digests massive texts, constructs a well-structured speech on a given topic, delivers it with clarity and purpose, and rebuts its opponent. Eventually, Project Debater will help people reason by providing compelling, evidence-based arguments and limiting the influence of emotion, bias, or ambiguity.

IP Issues: Today and Future



- Today and Future issues are basically the same
 - Too Much Data for a human to Read, Analyze and Understand
 - 10 Millionth US Patent Issued...
 - >4 Billion Web pages indexed
 - Too Many Formats and Languages
 - Cross/Enabling Technology Relationship/Connection Issues

How Can One Analyze This Amount of Complex Data?

How Can Augmented Intelligence Help ?



- We must begin to train AI to Ingest, Digest, Understand and Analyze the tremendous amount of data and to provide insights
- Insights provided should be used as a guide..*Augmented Intelligence*
 - Ingest, Digest, Understand and Analyze Data Rapidly
 - Steer the user towards the relevant information
 - Provide insights a user may not have found due to
 - Expertise
 - Skills
 - Data Volume

How is IBM T&IP Leveraging AI?



- IBM is Leveraging Watson Technology to Ingest, Digest, Understand and Analyze the tremendous amount of data and to provide insights
 - We are applying it to multiple use cases common in IP monetization
 - Evidence of Use
 - Prior Art
 - Landscaping/Portfolio Analysis
 - etc
 - IP Advisor with Watson
 - Is Consuming Patent and Technology Data for the Users using Natural Language Processing and Understanding
 - Identifying and Providing Insights and Connections using all available and relevant algorithms

The T&IP AI Team



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