New Digital Opportunities

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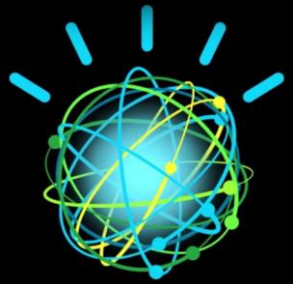
Marc Peters
CTO Energy, Environment & Utilities Europe, IBM Distinguished Engineer

AI/ML Foundations

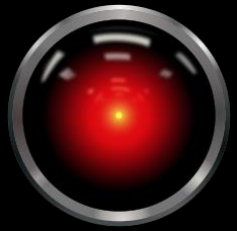
AI/ML as the domain of the academic and researcher. Few applications for everyday life.

AI/ML Today



AI/ML in widespread use to enhance everyday life, usually applied to specific narrow problems or tasks.

AI/ML Tomorrow



Artificial general intelligence and robotics enables computers to surpass the abilities of humans at most physical and mental tasks

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AI

Augmented Intelligence

https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=IMM14209USEN

Artificial Intelligence

Reasoning

Natural Language Processing (NLP)

Machine Learning / ML

Supervised Learning

Reinforcement Learning

Unsupervised Learning

Deep Learning - Neural Networks

The evolution of AI

Narrow AI
Emerging

Broad AI
Disruptive and Pervasive

General AI
Revolutionary

▼ We are here

2050 and beyond

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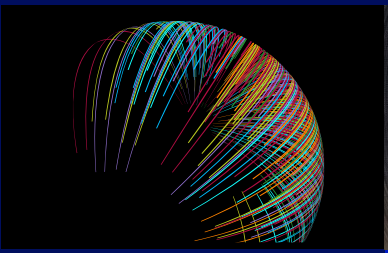
What lies ahead?

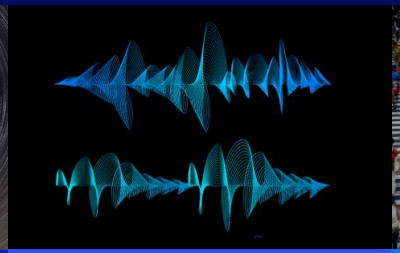


AI Everywhere

Healthcare
Finance
Agriculture
Government
Education
Energy
Science
Business solutions

Deeper Insights

Data-centric systems
Distributed Deep Learning
Neuromorphic systems
Quantum computing
Homomorphic encryption
Machine foresight
Cognitive discovery



Engagement Reimagined

Human-machine collaboration
New AI modalities
Augmented reality
Global trade logistics
Blockchain for payments

Personalization at Scale

Personalized healthcare
Micro-segmentation
Personalized finance
Targeted marketing
Personalized learning
Individualized solutions

Instrumented Planet

Environmental solutions
Digital agriculture
Connected cars
Geospatial-temporal data and analytics
Smart sensors

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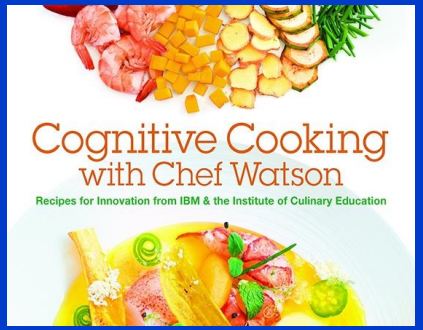
Augment the creative process

Cognitive Fashion

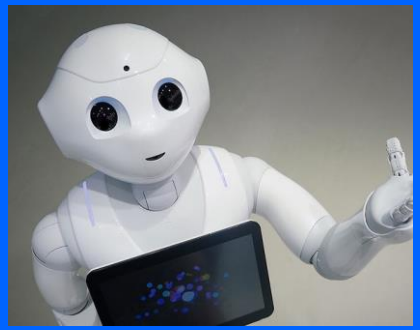
CHEF WATSON™



“Morgan”

Enrich individuali-sation and interaction

Pepper the robot



CogniToys DINOS

Sesame Street

Transform Industries

Insurance

Energy

Enabling Technologies to Meet Future Needs

Cognitive Computing and Blockchain ensure system stability and efficiently process billions of transactions, while advanced Cybersecurity protects an increasingly vulnerable energy system against attacks

Control
billions
of devices

AI / Cognitive Computing

Trust
millions
of participants

Blockchain

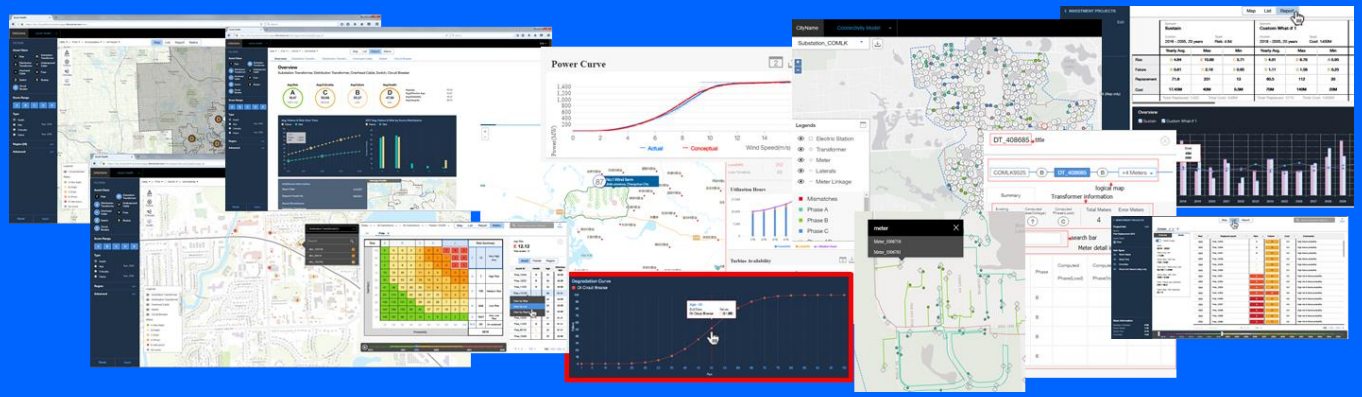
Secure
critical national
infrastructure

Cybersecurity

IBM

Machine Learning applied - Examples

Insights for Energy



Asset Performance Management –Improved Reliability

Predictive Maintenance – Optimize maintenance activities ad speed

Asset Investment Scenarios and support investment planning

Situational Awareness – What happens down to individual assets

Wind Farm Operations und Maintenance – Situational awareness for wind farms

Connectivity Analytics – customer to asset mapping report

“AIs are only as good as the data we train them with.”

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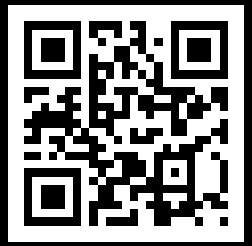

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