IOTSWC 2019
ARTIFICIAL INTELLIGENCE FORUM

Barcelona, October 2019

Wael William Diab, Chair
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ARTIFICIAL INTELLIGENCE MARKET ASSESSMENT

▶ Traditionally focused on large scale problems that were either too hard and complex to solve with traditional compute methods or were in specialized emerging areas

▶ This is no longer the case. Machine learning has widened the applicability of AI. Focus on the **digital transformation** has created a demand for services and more intelligent analytics. Examples:

  ▶ AI expert systems are helping **healthcare** professionals make better decisions for patients with proper trustworthiness measures designed into the system,

  ▶ AI deployment in the **industrial manufacturing** sector where it is driving higher efficiencies by allowing robots to work alongside human workers with the proper safety measures designed into the system,

  ▶ AI deployment in the **financial ecosystem** where it is enabling applications that range from asset management that takes into account factors such as the clients risk to fraud detection that reduces false-positives

▶ Emerging applications are numerous and diverse e.g. **consumer**, **retail**, **digital assistants**, **expert systems** such as smart grid, **marketing intelligence** tools, enterprise etc.

▶ IDC estimates that **by 2019 40% of digital transformation initiatives will use AI services**, and **that by 2021 75% of enterprise applications will use AI**

▶ The growing **demand for AI systems to provide insights into business problems**, is fueling the growth forecasts such as those by IDC that cognitive and **AI spending will grow to $52.2 billion** in 2021 achieving a **compound annual growth rate (CAGR) of 46.2%** over the 2016-2021 forecast period

ECOSYSTEM APPROACH

- AI is **not a single technology** but a collection of technologies
- **Stakeholders are numerous and diverse**
- Stakeholders are not treating AI and other key technologies as separate and disparate technology research areas
- Rather, stakeholders are approaching the deployment of AI systems from a **business angle with a focus on customers needs, segments, services, products and regulatory requirements**
- Emerging challenges range from **technical** (e.g. AI Systems engineering and integration) to **societal** (e.g. Ethics, trustworthiness etc.) with diverse application domains

Agenda

Tue

- **AI 01** – AI and Cognitive Systems Forum Welcome Address
- **AI 02** – Artificial Intelligence – Making Real Impact on Human Life and the World Around Us
- **AI 03** – How We Learned to Start Cooking High Quality Bitumen and Love the ML in Petrochemical Industry
- **AI 26** – How to Make a Mining Excavator See
- **AI 04** – Tailoring the Factories of the Future
- **AI 05** – Improving Patients Health with IoT
- **AI 06** – Artificial Intelligence Industry Ecosystem and Standardization Landscape
- **AI 07** – Panel: IIC Emerging Initiatives on Industrial Artificial Intelligence
- **AI 08** – Intelligence as a Product: Bringing Innovation to Field Services with AI

Wed

- **AI 10** – The Age of Artificial Intelligence: What will the world look like in 10 years?
- **AI 11** – How Artificial Intelligence can help the fight against climate change
- **AI 18** - AI and IoT Are Already Making Impact for Business and Society
- **AI 13** – A Practical Framework and Approach to Responsible AI
- **AI 14** – Panel: Ethics and Social Responsibilities in Deploying AI
- **AI 15** – Beyond Machine Learning: Developing Truly Intelligent Systems By Embedding Human Expertise to Digital Twin
- **AI 16** – Digital Twin in Solar – Enlightening Black Boxes by Providing Condition-based Information
- **AI 17** – Extending Machine Learning to Industrial IoT Applications at the Edge
- **AI 12** – Improving Customer Experience through Context: Real Connected Infrastructure Implementations
- **AI 19** – Machine Learning at the Extreme: Teaching AI to Sail

Thu

- **AI 20** – Panel: Vision-based cobots as a key enabler for smart factory automation
- **AI 09** – Enjoying Warehouse Motion Intelligence and New Operational Insights from Wi-Fi technology Smart Data
- **AI 22** – IoT and AI in Pharma
- **AI 23** – The Pivotal Role of AI and ML on Marel's Road to Industry 4.0
- **AI 24** – Panel Discussion: The Future of AI
- **AI 25** – Closing Remarks

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Industrial AI Applications

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AI Industry Ecosystem and Emerging SDO Work

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Societal Impact of Artificial Intelligence

AI 15 – Beyond Machine Learning: Developing Truly Intelligent Systems By Embedding Human Expertise to Digital Twin

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Artificial Intelligence and Digital Twin

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Consumer-facing AI Applications

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Industrial AI Applications

Looking to the Future