How AI Revolutionizes Robotics and Automotive Industries

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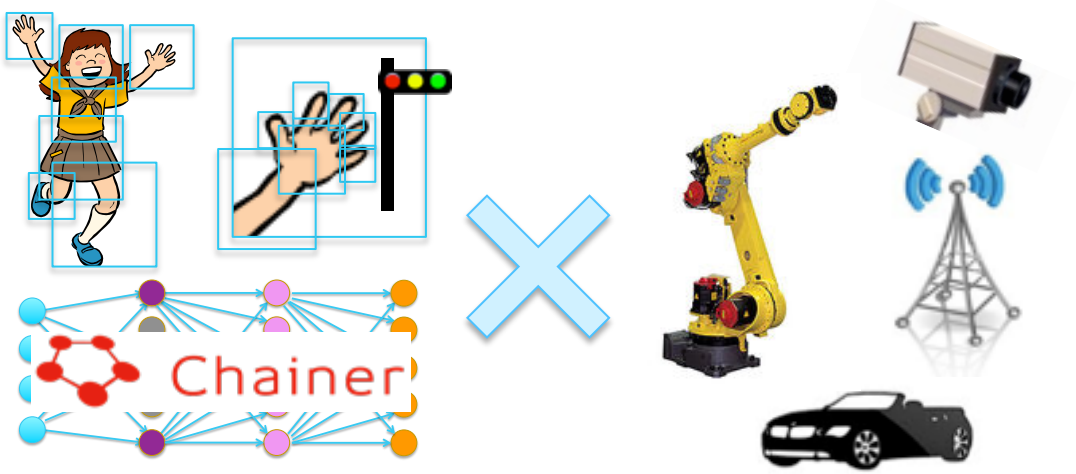
Preferred Networks

Company profile: Preferred Networks, Inc. (PFN)

- Founded: March 2014
- Headquarter: Tokyo, Japan
- Subsidiary: San Mateo, California
- Company size: 30 engineers & researchers
- Investors: NTT (Oct. 2014), FANUC (Sep. 2015), Toyota (Dec. 2015)

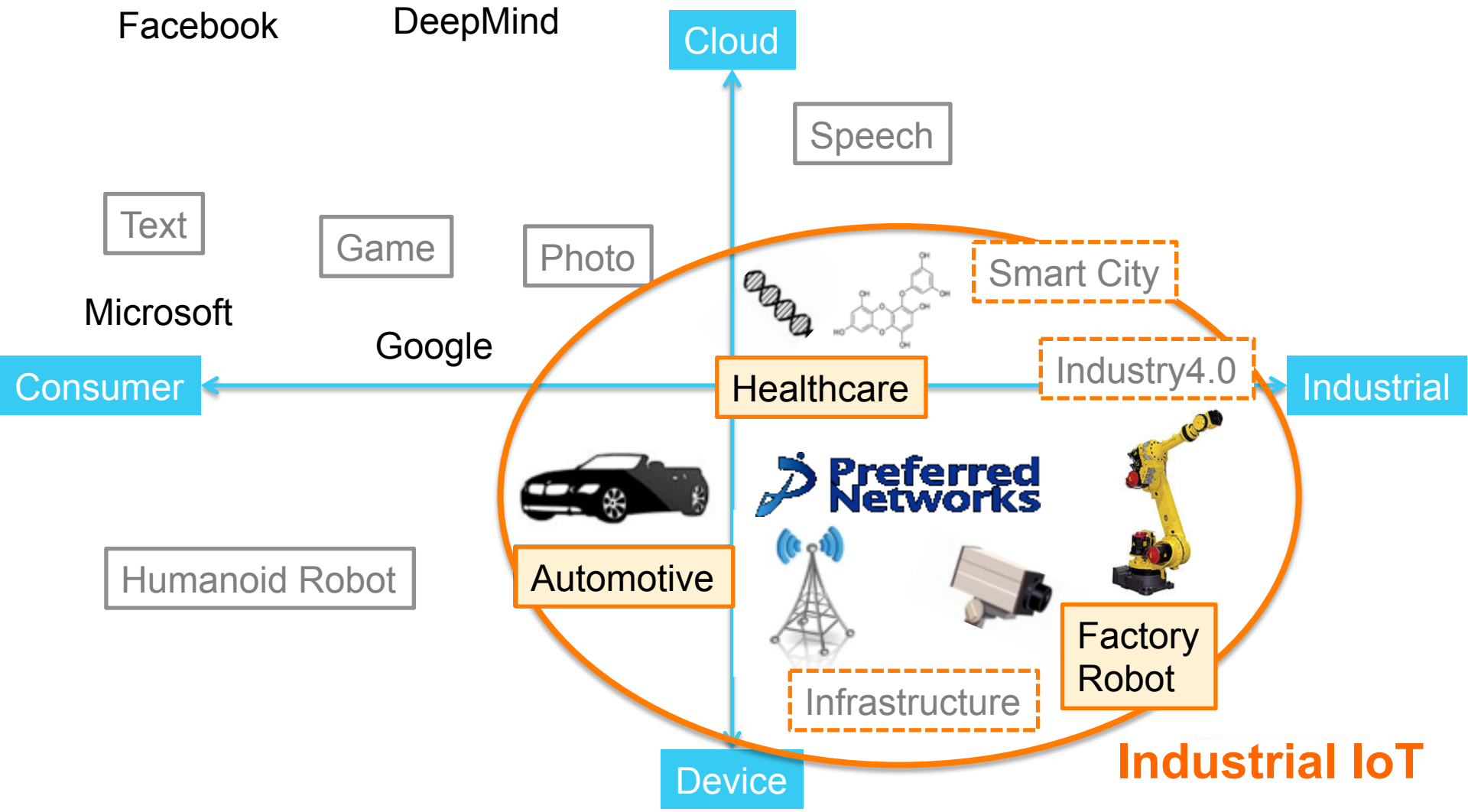


Deep Learning
(AI technologies)

Industrial IoT

Preferred Networks

Preferred Networks' positioning in AI: Industrial IoT



How AI revolutionizes Industrial IoT: Manufacturing and AI companies joining forces

- AI-based *intelligence* is the key success factor in many industries
- Manufacturers reach to AI technologies for help
- PFN is partnering with the world-leading companies in each industry
  - Toyota
  - FANUC
  - NTT
  - Panasonic
  - NVIDIA
  - Cisco

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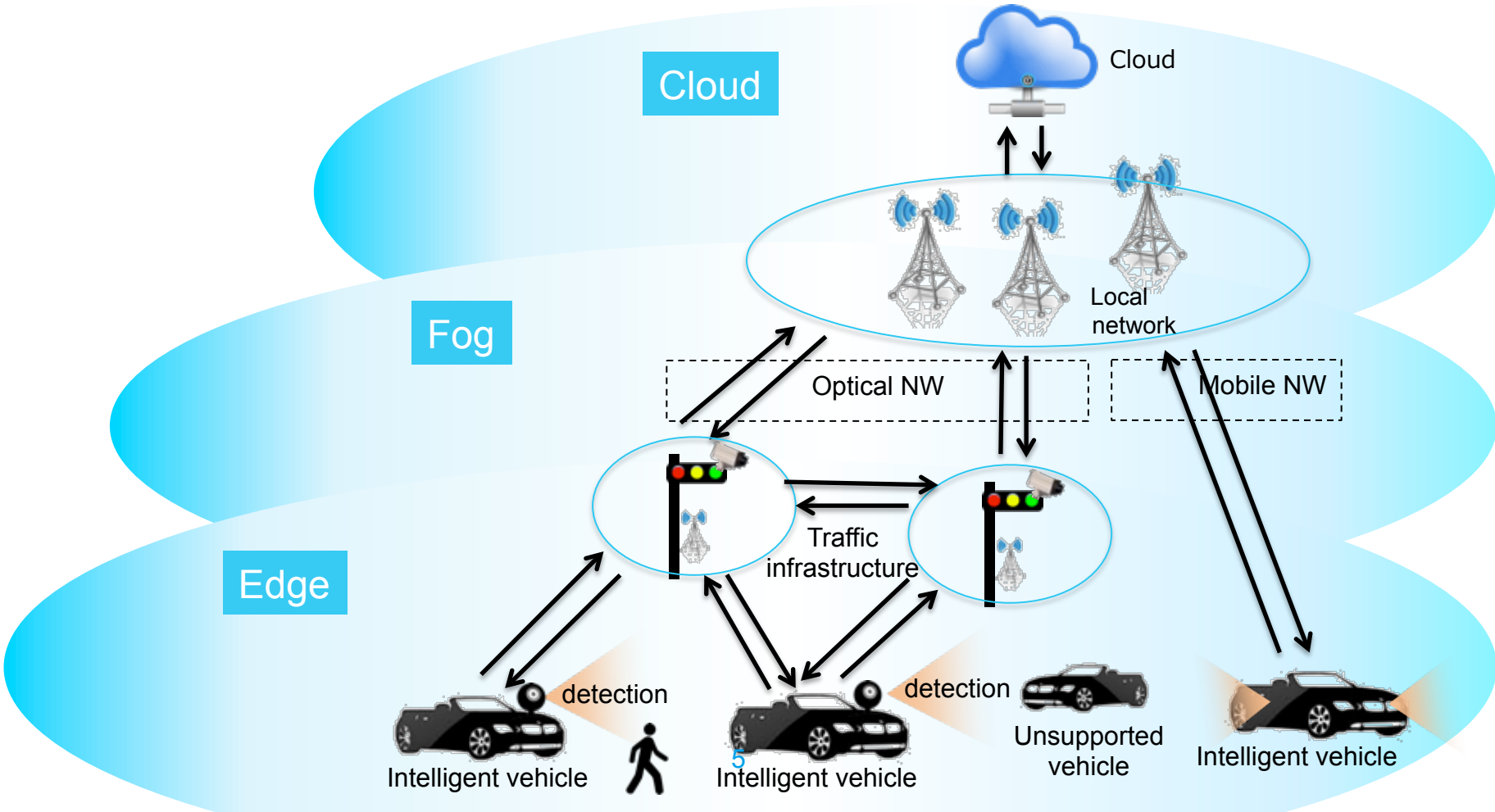
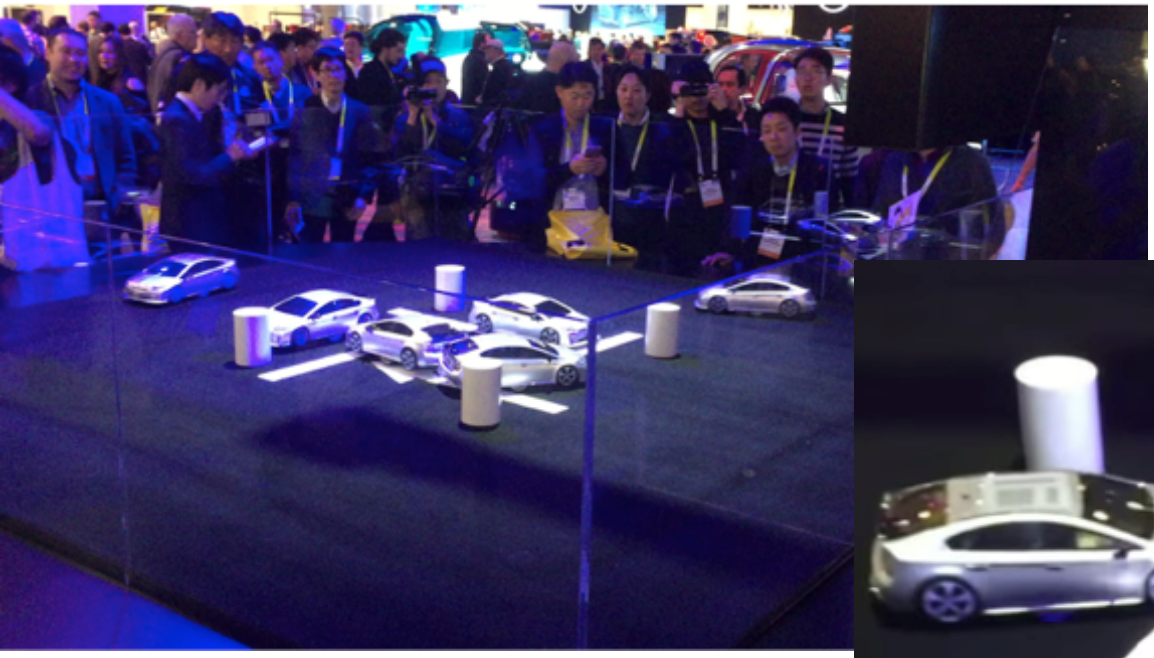
Automotive: Intelligent Connected-car Platform

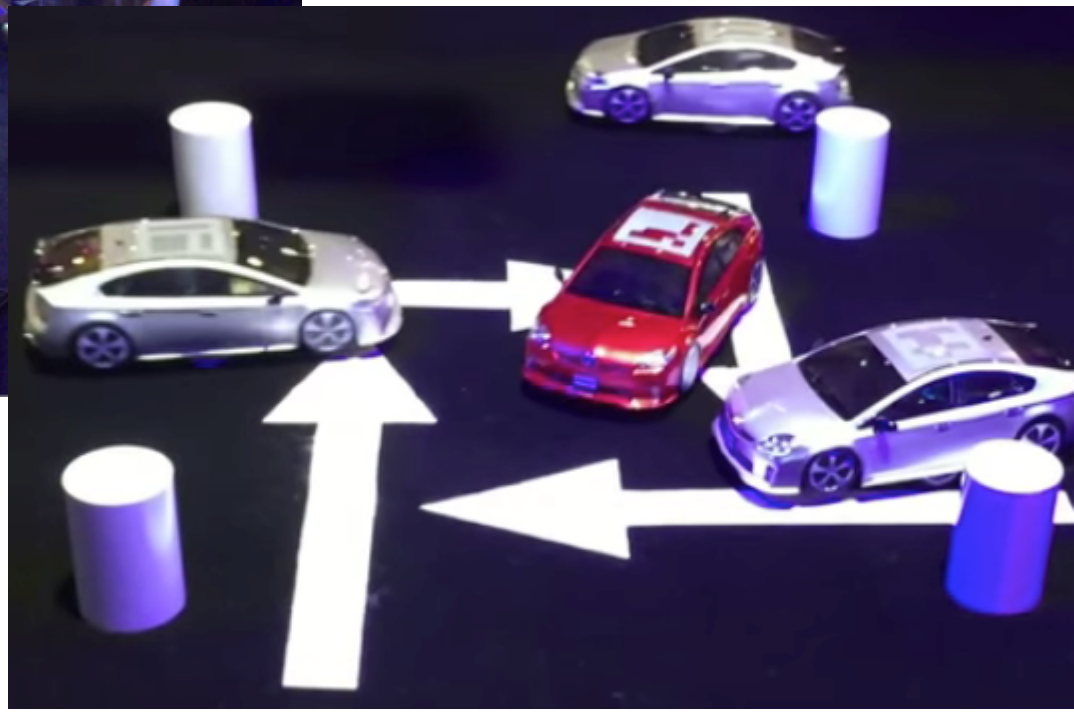
- Providing different intelligence applications on cars and across infrastructure
- Architecture using road infrastructure and network devices as a Fog layer



Automotive Demo: Toyota Self-learning Cars @ CES'16



Presented at the Toyota booth
in the main venue of CES this year



Silver cars autonomously learned
how to avoid obstacles and cars,
including manually controlled red car.

Movie: https://www.youtube.com/watch?v=7A9UwxvgcV0

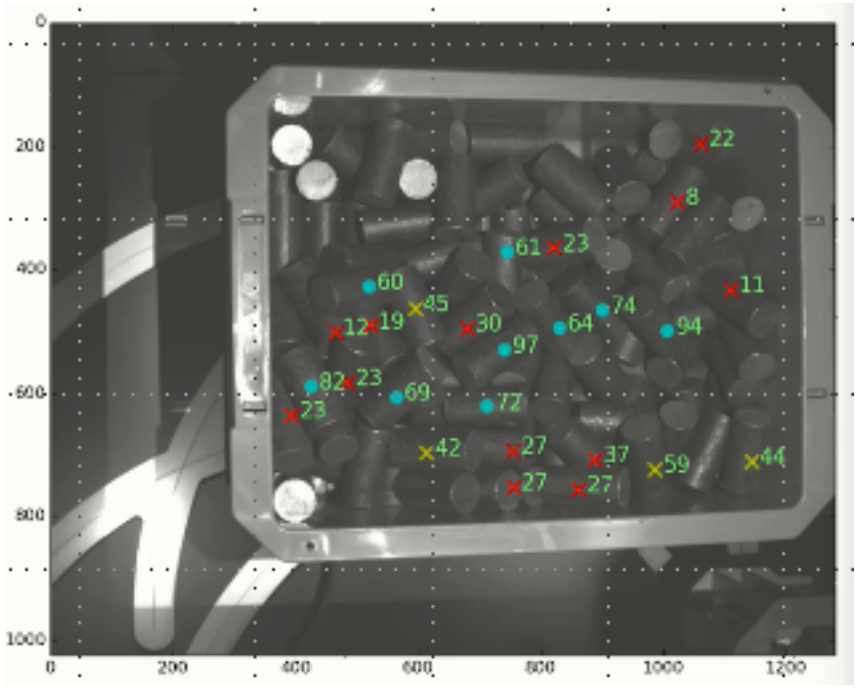
Robotics: Optimized Factory Machines & Zero Downtime

- Integrated intelligence platform from factory level to edge machines level
- AI can help further improve the utility and efficiency of factories

Robotics demo: Intelligent bin-picking robots @ International Robot Exhibition ’15

- Robot tries to pick up cylinders as fast and as accurate as possible
- Deep learning automatically learns which picking point is most likely to succeed.

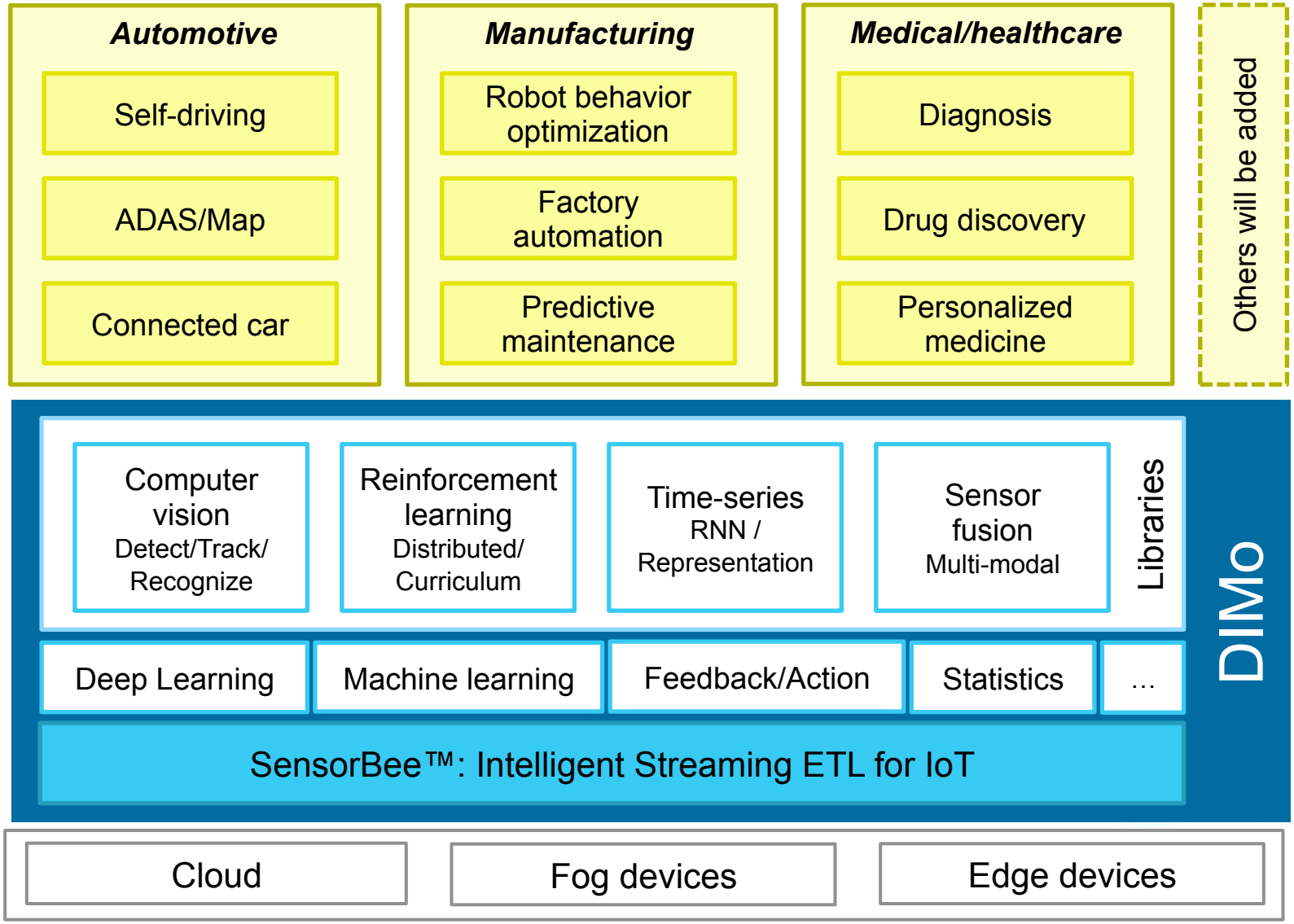
Predict success possibility for each candidate point with 3D sensors



8 hours training reaches 90% success rate, the same accuracy with human-guided case

Movie: https://www.youtube.com/watch?v=ydh_AdWZflA

Deep Intelligence™ in-Motion (DIMo): Horizontal AI platform across industries



Summary

- Artificial Intelligence increasingly creating tremendous opportunities not only for consumer products/services but also in industrial applications
- PFN is collaborating with Toyota, FANUC, and others to integrate deep learning capabilities into automotive and robotics systems

- PFN is looking for partnership in Europe
  - Joint R&D or OEM collaborations w/ solid business plan
- PFN is looking for top talent (https://www.preferred-networks.jp/job)
  - Researchers: Machine Learning, Robotics, Computer Vision, Bio-healthcare
  - Engineers: Distributed Systems, Embedded Device, Data Analytics