Machine Learning over Wireless Networks

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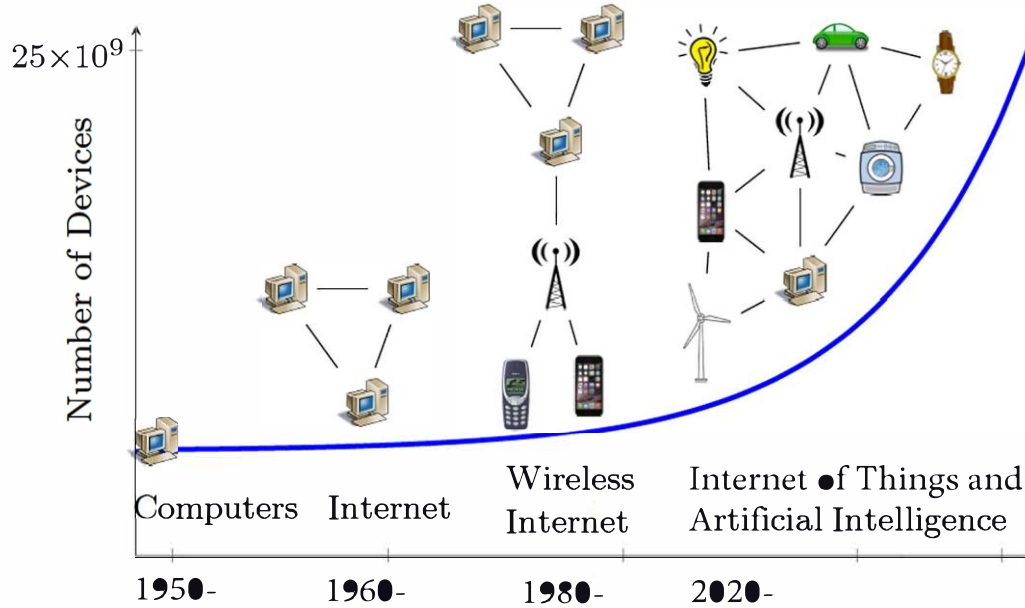
Digital Futures

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ML is not Conceived for the IoT World

1. Computational limitations 👎
2. Communication latency 👎
3. Bandwidth limitation 👎
4. Energy consumption 👎
5. Security & Privacy 👎
6. …and performance of ML 😱

- ML is conceived for centrally collected data or private powerful networks of processors having clean, easy to access, statistically rich data, without communication channel limitations

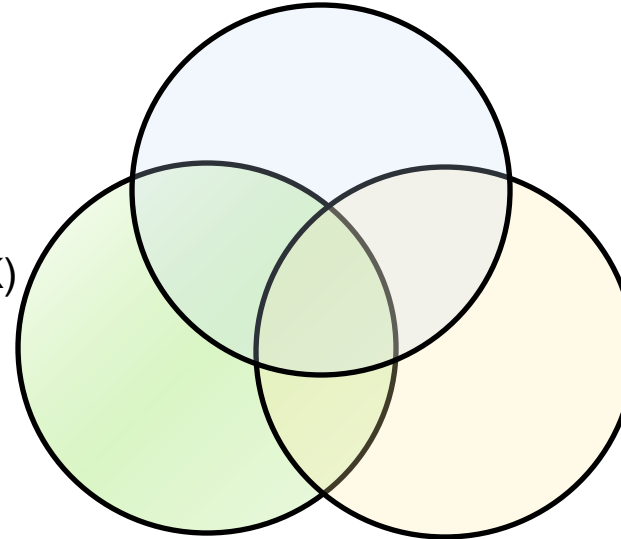- Traditional ML leaves much to desire for wireless networks

Main Research Areas

1. Distributed ML over Network
(SSF SAICOM, 35MSEK)

2. ML for Networks
(DF, WASP, VR, 30MSEK)

3. Networks for ML
(KAW TAICOM, 35MSEK)

- ML over Wireless Networks
  1. New distributed ML services running over networks (smart buildings & cities, autonomous vehicles)
  2. Data-driven design of networks (V2X comm, Industry 4.0)
  3. New network protocols to support ML services (augmented and virtual reality, Industry 4.0)

- We need new theory, algorithms, hardware and software!