ML/AI in Web apps—examples, sample challenges and network collaboration

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Goals

- A picture how Web Applications tomorrow could use ML/AI ("MI")
- Ideas about technologies we can expect from "Web Cloud Native"
- Thoughts about "Collaborations" between Web Applications and the "5G"
An example web app with MI inside…

User Intent Assistant Model

Network Intelligence Model

Predicted user intent: "Share experience with Bob"

Web App with MI inside

5G "Slice" for Public Internet Access (MBB/FWA)
An example web app with MI inside…

- "AR sharing with Bob?"

"Siri"

Alice

Prepare Sharing with John

Web App

Classifier

Browser

UA

"bird"

User Intent Assistant

Model

App Server

Network Intelligence

Model

• 4 models in operation
• A lot of devices and users
• Google search, Assistant, YouTube, GCP, …
• Many models in operation…
• What does it take to have an MI model "in operation"?
Simple MI application anatomy

- Two processes
  - Service delivery
  - Model devOps

- Model provides predictions or classifications

- Model devOps specifics:
  - Deep Learning training compute intensive
  - Prediction Accuracy vary
  - Production cost/prediction?
  - Robustness, Security and privacy
Challenges and some “co-optimizing” questions

› Model devops
  – Training
  – KPI’s
  – Performance: speed, accuracy, robustness, security
  – Production cost

› 4 models, B’s of devices, Model devOps-a large scale software system.

› Food for thought:
  – Web Cloud native MI technologies impact on 5G systems?
  – 5G enabling Media intensive and "MI native" Apps?
  – Cross layer collaboration and exposure?
Co-optimization?  
App-network collaboration?

› 1st- Connectivity and distributed computing

› Cross Layer is Not a new question

› Technically, there are possibilities and barriers

› But barriers from business perspective in "MBB" area/Internet/Public Web

› But in Private networks, "verticals", such as manufacturing, Smart City, etc, cross-layer may stand a better chance to succeed

› And in MI, "DATA is King"- A driver for Shared data lake/pipeline and learnings cross layer?
End