Federation, Generalisation, Heterogeneity or Edge v. In-Network compute?

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Federation

- Scale to Edge
- A trillion devices
- Coordination! = k8
- doesn’t guarantee privacy
  - but helps - still need enclaves etc

- measure:
  - energy, availability, resilience
Heterogeneity

- CPU speciation
- accelerators - graphcore, gpu...
- In net, edge, dc?
- range of systems grown
- incorporating accelerators in
  - energy, privacy, resilience
  - net & cpu facing ML
- scale fed ML model share/acquire
- in net aggregator fn?
Generalisation

• Repos
• Repros
• Curations
• Jupiter notebooks++
  • Continuous Integration
• explainability, repro, repo
  • digital twins
• record negative outcomes too
• curate (web site decay:-)
• applicability/use case document/ethics
some refs

• UK view from JISC&STFC etc: https://bit.ly/3t6yGTu

• Public option for core: https://doi.org/10.1145/3387514.3405875

• Distr learning, e.g. https://arxiv.org/abs/1709.07772

• GAEN https://en.wikipedia.org/wiki/Exposure_Notification

• raft in cloud flare or k8 – replacement: https://arxiv.org/abs/2012.15762