ATTN Discussion Forum 2024

Session 4: Digitalization, Finance, and Innovation
Presentation #10

Exploring Responsible Innovation with Privacy Preservation: Federated Learning Policies for Digital Finance Services in Asia

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Challenges to Overcome

1 **INFRASTRUCTURE AND CONNECTIVITY:**
Lack of adequate connectivity

- FL relies heavily on reliable and fast internet infrastructure

- Without adequate connectivity, the decentralization that FL offers may not be feasible.

2 **COMPUTATIONAL RESROUCES:**
Lack of computational power to train models locally

- Lack the computational power needed to train AI models locally.

- Challenge when attempting to implement FL on devices or servers with limited processing capabilities.

3 **REGULATORY READINESS:**
Lack of clear and cohesive privacy regulations

- Lack of clear and cohesive privacy regulations across developing countries.

- Many are still in the early stages of regulatory development, making it difficult to establish a consistent framework for FL implementation.

4 **SKILLS AND CAPACITY:**
Gap in AI expertise in many developing regions

- Considerable gap in AI expertise in many developing regions

- Requires not only technical infrastructure but also skilled professionals

Areas for Further In-Depth Research

1 **Incentive Mechanism**

- FL depends on various institutions/individuals **collaborating and contributing their resources**
- The paper mentions a **token-based reward system**. Need more in-depth research.

2 **Low-resource Mechanism**

- How FL can be implemented **cost-effectively** for regions with limited resources
- **Hybrid approaches**—combining centralized and federated methods; synchronous and asynchronous training