Statistical Optimization & Collaborative AI Learning (SOCAL Lab)

Privacy-first ML on distributed tables; federated learning, synthetic data, and reliable modeling when data are siloed or tail-heavy.

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Scan QR for lab website & publications

Lab culture

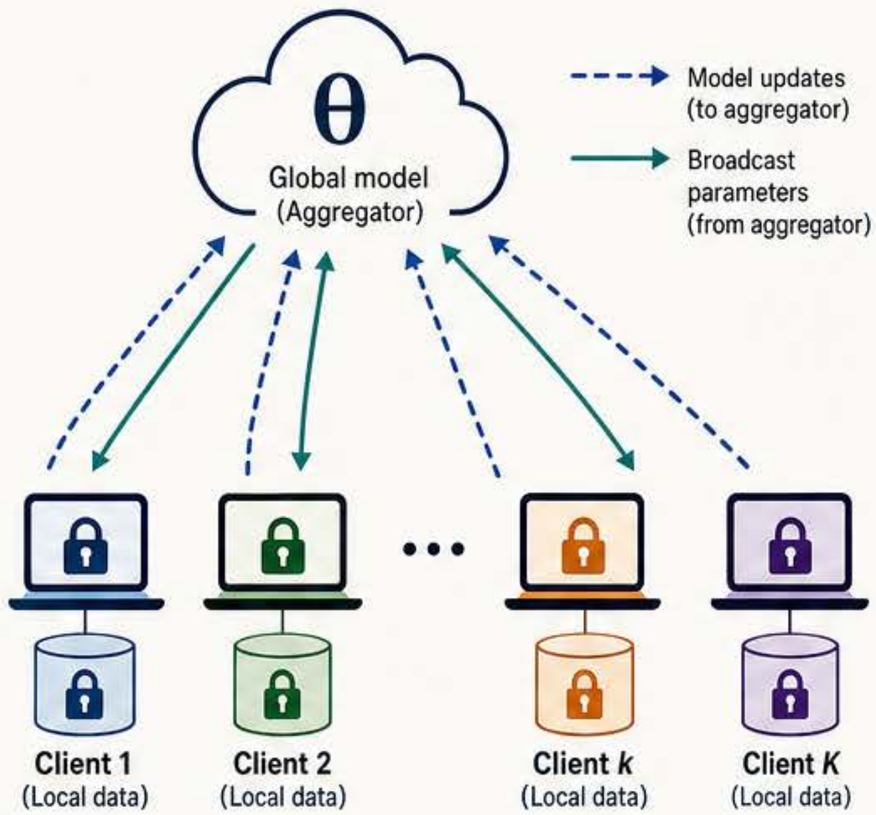
Flat hierarchy: strong ideas matter more than seniority. We collaborate closely on real-world problems with rigorous statistics and implementable AI.

Opportunities for students

- Hands-on national projects when topics align — co-PI collaboration with the National Data Agency (Korea) on synthetic data & data privacy (no project number shown).
- Project participants may receive stipends and performance-based support; amounts depend on project rules and budgets — not guaranteed in advance.

Selected venues: Pattern Recognition · IEEE Internet of Things Journal · IEEE Transactions on Big Data

Federated learning



Raw data stay on local devices. Only model updates are shared.

Synthetic data & tail regions

Synthetic data can improve model utility in rare region