Randori

Privacy-Preserving Data Collection

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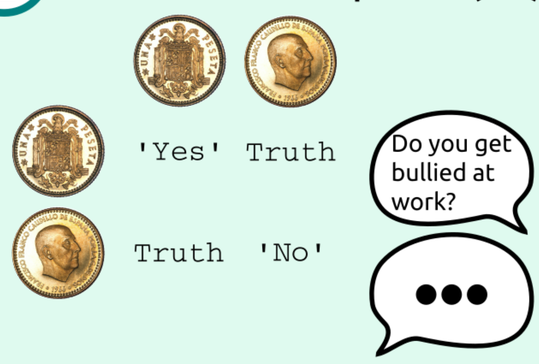
1 Why local differential privacy?

- ✔ Enforced client-side
- ✔ Participant never sends sensitive data
- ✔ Data breach ≠ privacy breach
- ✔ Simplicity of *Randomized Response*

2 Randomized Response (RR)



Fun fact

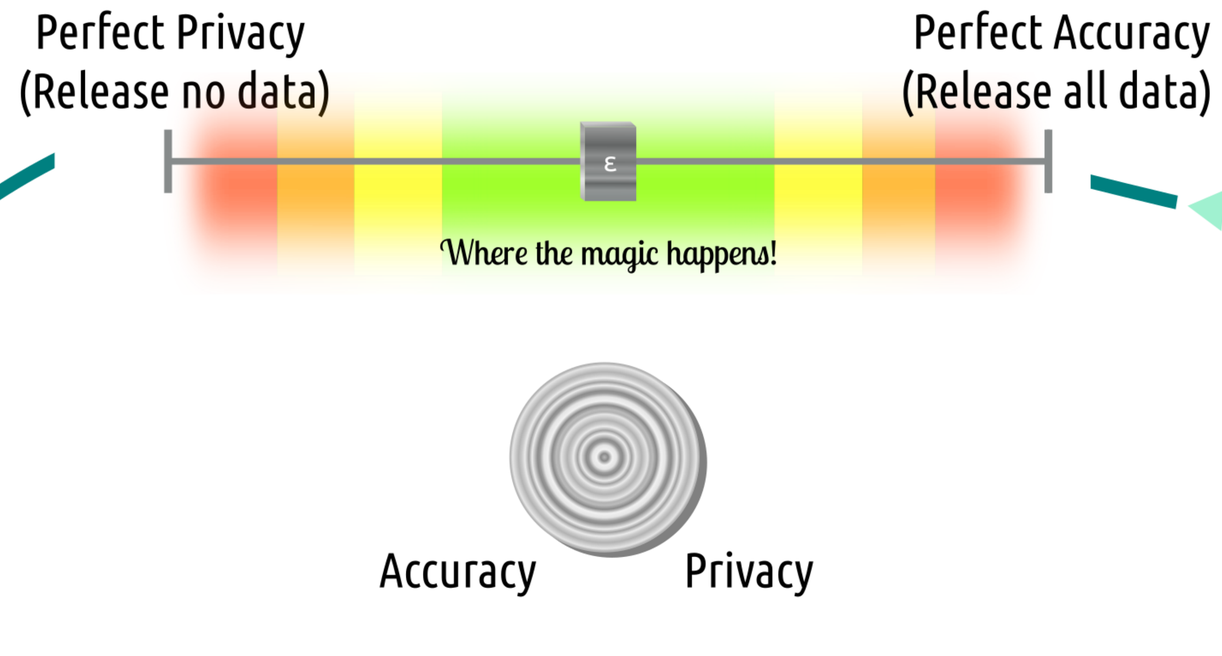
Randomized response is differentially private, but predates the concept of differential privacy by 41 years (1965 vs 2006)

3 Why is RR not being used?

- ➢ End-to-end privacy
- ➢ Accuracy-privacy trade-off

4 Privacy vs. accuracy

- ➢ Trade-off
- ➢ Empirical or analytical



What is Randori?

Randori is a set of tools:

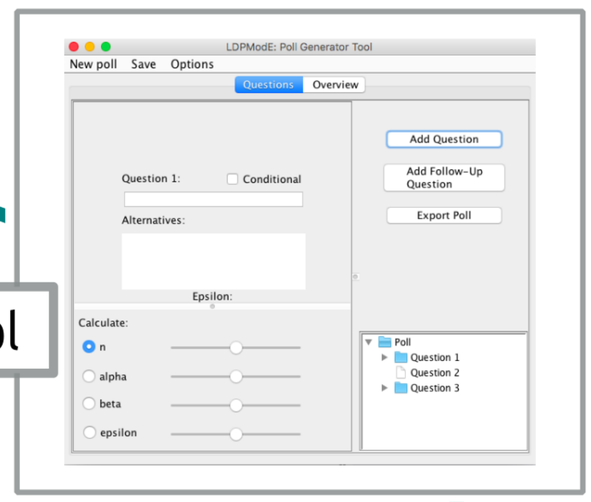
A) Poll generator tool

B) Simulation environment

C) Server and client for data collection

Purpose

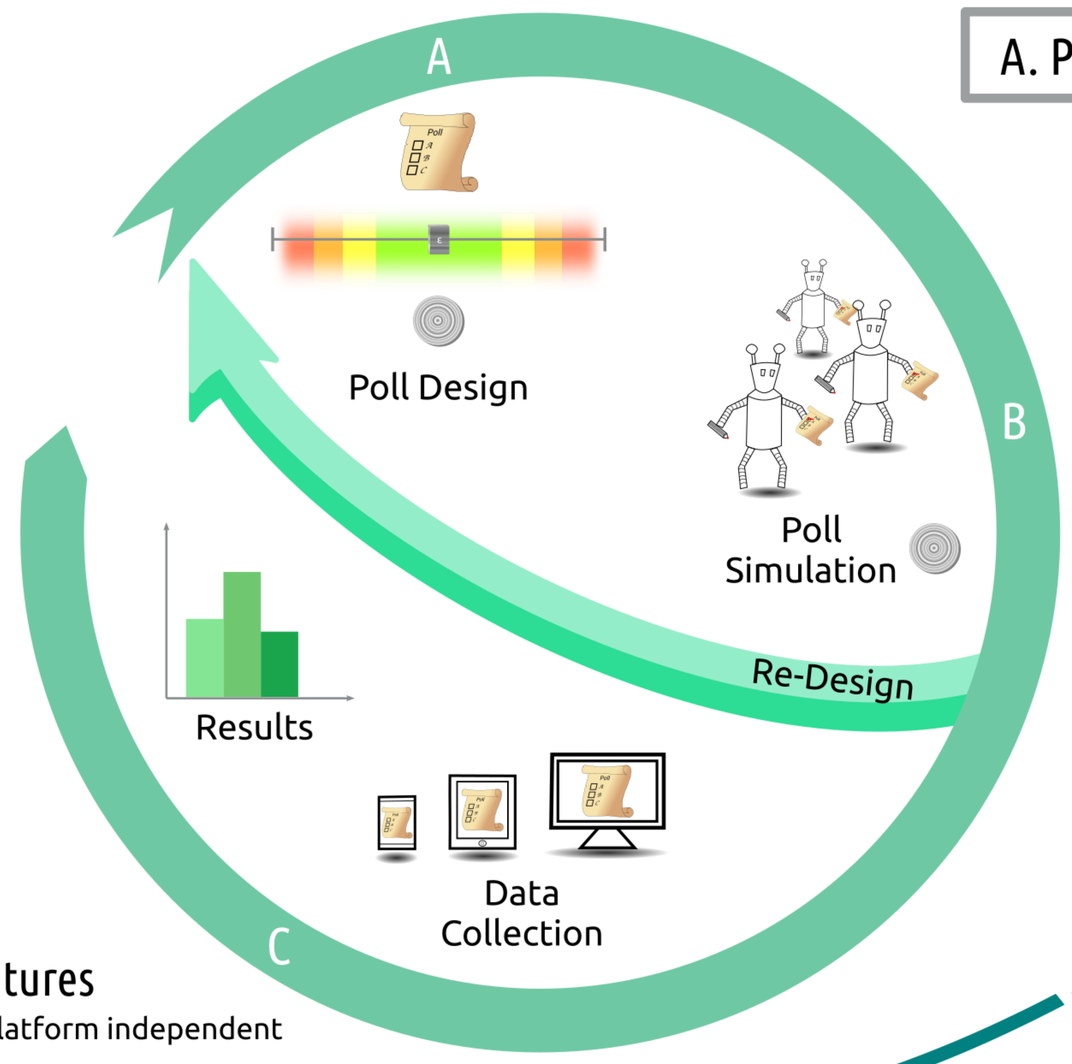
Make differential privacy *accessible*



A. Poll Generator Tool

Features

- ✔ Follow-up questions
- ✔ Calculates ε
- ✔ Analytical accuracy bounds



Features

- ✔ Platform independent
- ✔ Handles side-channels

B. Simulation Environment

Features

- ✔ Empirical accuracy results
- ✔ Custom input distributions