Main idea

- Define action a to be $Q^{(2)}[r^{(1)}]$ as a function of the response $r^{(1)}$

- Define loss function

- Using Bayes risk lower bounds, argue that loss is close to 1 in expectation

- Second round query doesn't have a large information about (u, v) as well

- Induct using Bayes risk

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My other works

- **Classic**
  - Ridge Regression [KW '20], [KW '22]
  - Dimensionality Reduction for Sum-of-Distances [FKW '21]
  - Reduced Rank Regression [KW '21]
  - Fast and Small Subspace Embeddings [CCKW '22]
  - Fast training of Transformers via Sketching [KMZ '23]