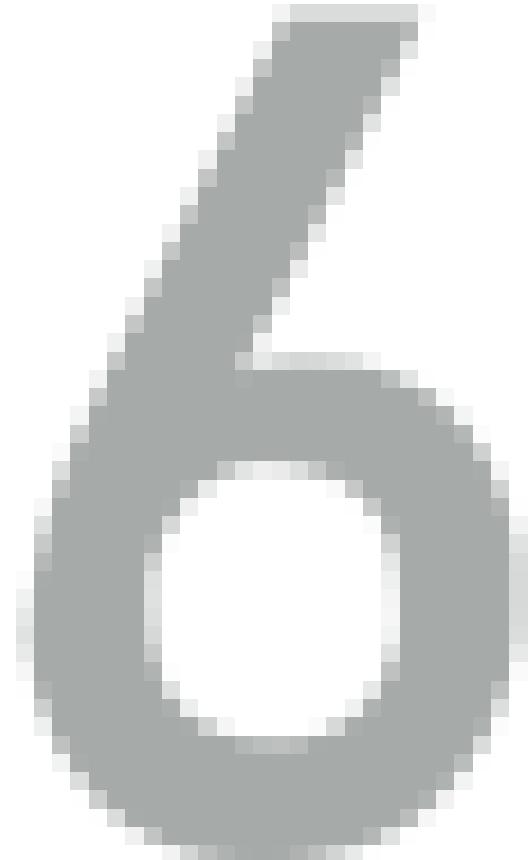
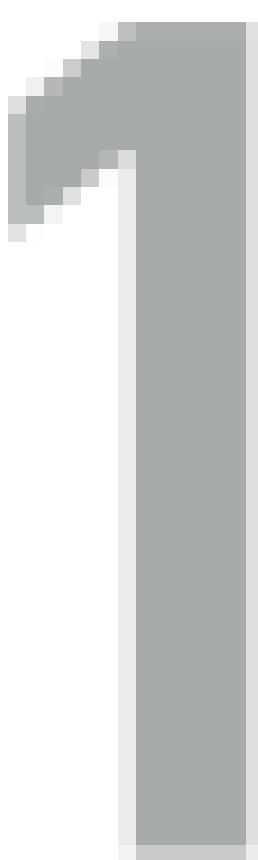


MONTE CARLO MATCH



 **Probiem**: **copointing** **is hard**

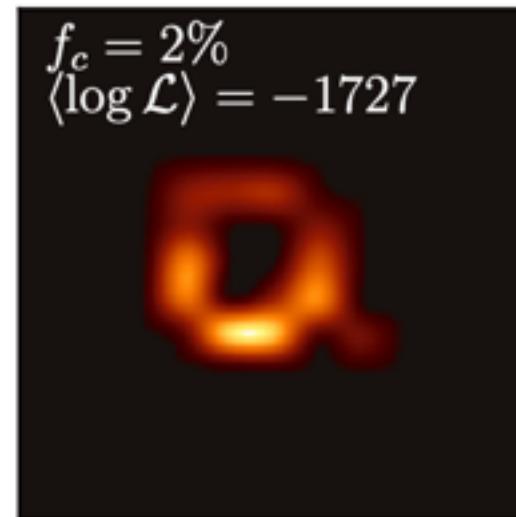
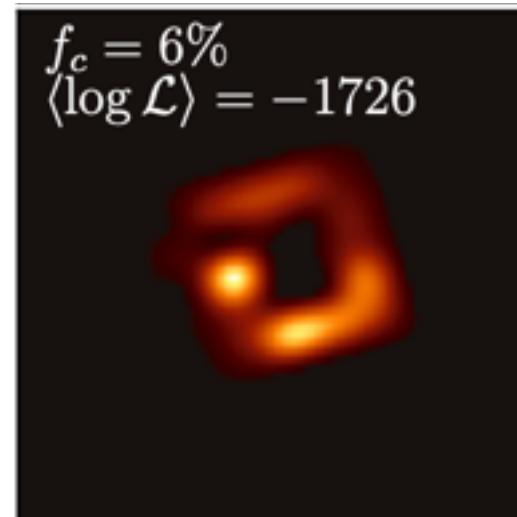
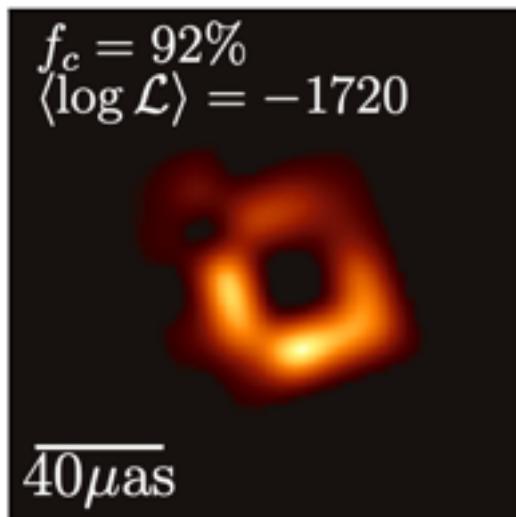
→ Problemen in high-dimensional spaces worse get

► algorithms: approximate inference

perfect inference algorithm

▶ Accuracy increases with load

- ▶ Multi-modality, varying scales, unidentifiable, combinatorial explosions



Complexity increases with protein complexes

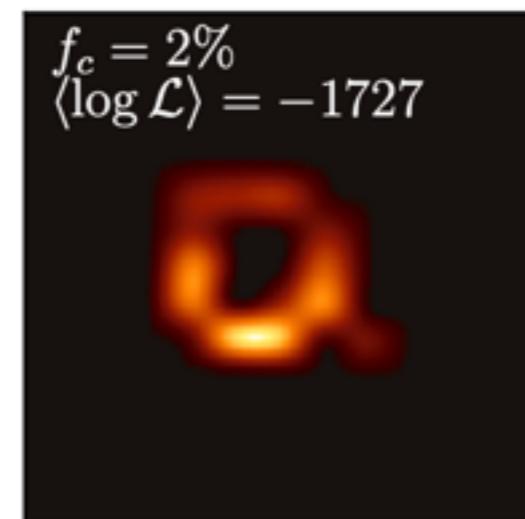
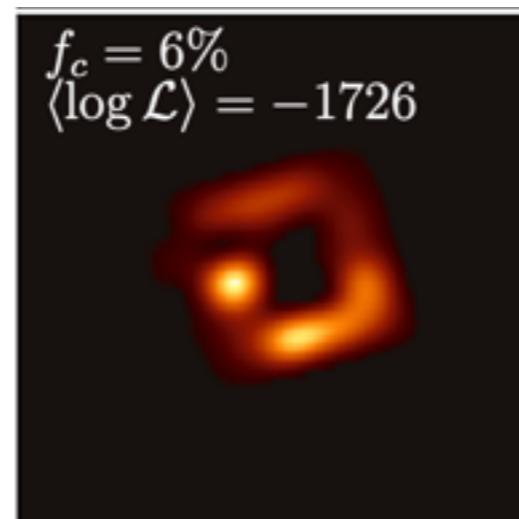
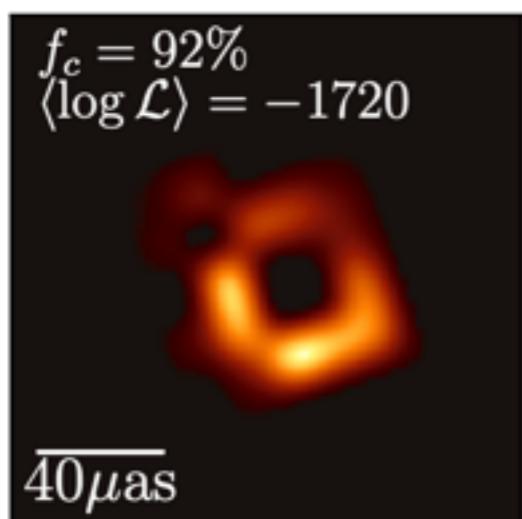
→ A class for a fixed-complexity algorithm that gets a target accuracy and a tolerance.

► **that gadgets get for accuracy** **classifications** **are perfect**

MONTE CARLO METHODS:

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- ▶ **Problem:** computing integrals is hard
 - ▶ Multi-modality, varying scales, unidentifiable, combinatorial explosions
 - ▶ Problem only gets worse in high-dimensions
- ▶ **Monte Carlo (MC) algorithms:** approximate inference
 - ▶ A class of algorithms that gamble accuracy for a fixed compute budget.
 - ▶ Accuracy increases with budget
- ▶ **Las Vegas algorithms:** perfect inference
 - ▶ A class of algorithms that gamble computational budget for perfect accuracy
 - ▶ Compute resources increases with problem complexity



MONTE CARLO ESTIMATOR