

- Describe briefly what is a probabilistic database.

A probabilistic database is an uncertain database in which the possible worlds have associated probabilities. Probabilistic

Databases extend Relational Databases with probabilities.

Probabilistic database combines Formal Logic with Probabilistic Inference and requires a new thinking for both databases and probabilistic inference

- What are some key applications of probabilistic databases?

Sensor data management

Information extraction

Data Cleaning

Knowledge representation

Fuzzy matching

Business intelligence

Data integration

Scientific data management

Data anonymization

- Why do you think that probabilistic databases have not been widely adopted yet?

The major challenge in a ProbDMS is that it needs both to scale to large data volumes, a core competence of database management systems, and to do probabilistic inference, which is a problem studied in AI. While many scalable data management systems exists, probabilistic inference is in general a hard problem, and current systems do not scale to the same extent as data management systems do.