

# **Data and Applications Security**

## **Developments and Directions**

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**Lecture #7**  
**Inference Problem - I**

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# Outline

- History
- Access Control and Inference
- Inference problem in MLS/DBMS
- Inference problem in emerging systems
- Semantic data model applications
- Confidentiality, Privacy and Trust
- Directions

# History

- **Statistical databases (1970s – present)**
- **Inference problem in databases (early 1980s - present)**
- **Inference problem in MLS/DBMS (late 1980s – present)**
- **Unsolvability results (1990)**
- **Logic for secure databases (1990)**
- **Semantic data model applications (late 1980s - present)**
- **Emerging applications (1990s – present)**
- **Privacy (2000 – present)**