

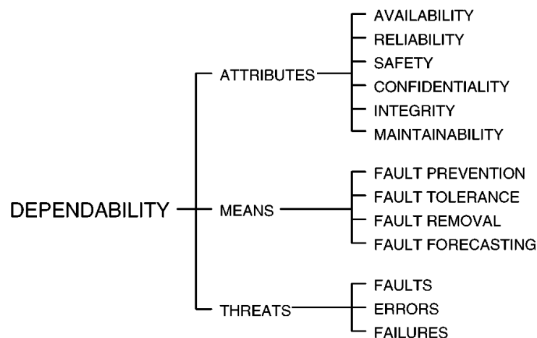
# Dependability of Distributed Systems & Applying Fault Tolerant Techniques

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(Turing Memorial Lecture: Facing Up to Facts - Brian Randall)

## Approaches

- System Infrastructures
  - P2P
  - Master & Slaves
- Replication
  - Task Replication
  - Data Replication
  - Replication for Verification
- State Storage
  - Checkpointing / Logging
  - Roll back/forward

# Fault Tolerant Classifications

- State Storage
  - Checkpointing/Logging
  - Global vs Dependable Links
  - Synchronous vs Asynchronous
  - Language level vs Network/OS level
- FT Algorithms
  - Fault Oblivious Algorithms
  - n-Fault Tolerant Algorithms
- Application Level
  - Explicit checkpointing
  - Extended FT MPI Semantics
  - OO Reflection/Inheritance
- Runtime System Level
  - Supervision
  - Frameworks (e.g. MapReduce)
  - Replication
- Network Level
  - FT Network Protocols
  - FT Network Topologies