FIG. 3 - ADAPTIVE DECISION TREE LEARNING PROCESS FLOW

MACHINE LEARNING OPTIMIZATION WORKFLOW

THREAT DATA RECEIVED (200) — FEATURE EXTRACTION (210) — HISTORICAL LOOKUP (220)

DECISION TREE NAV (230)

ROUTE ASSIGNMENT (240)

PROCESSING EXECUTION (250)

PERFORMANCE MEASUREMENT (260)

Metrics:
- Accuracy
- Latency
- Resources
- Throughput
- False +/-
(320)

PERFORMANCE OK? (270)

YES - GOOD

UPDATE STATISTICS (300)

NO - POOR

NO - AVERAGE

TREE RESTRUCTURE (280)

MODEL UPDATE (290)

THRESHOLD OPTIMIZATION (310)

Optimize:
- Thresholds
- Weights
- Tree Depth
- Split Criteria
(330)

Adaptive Learning Loop