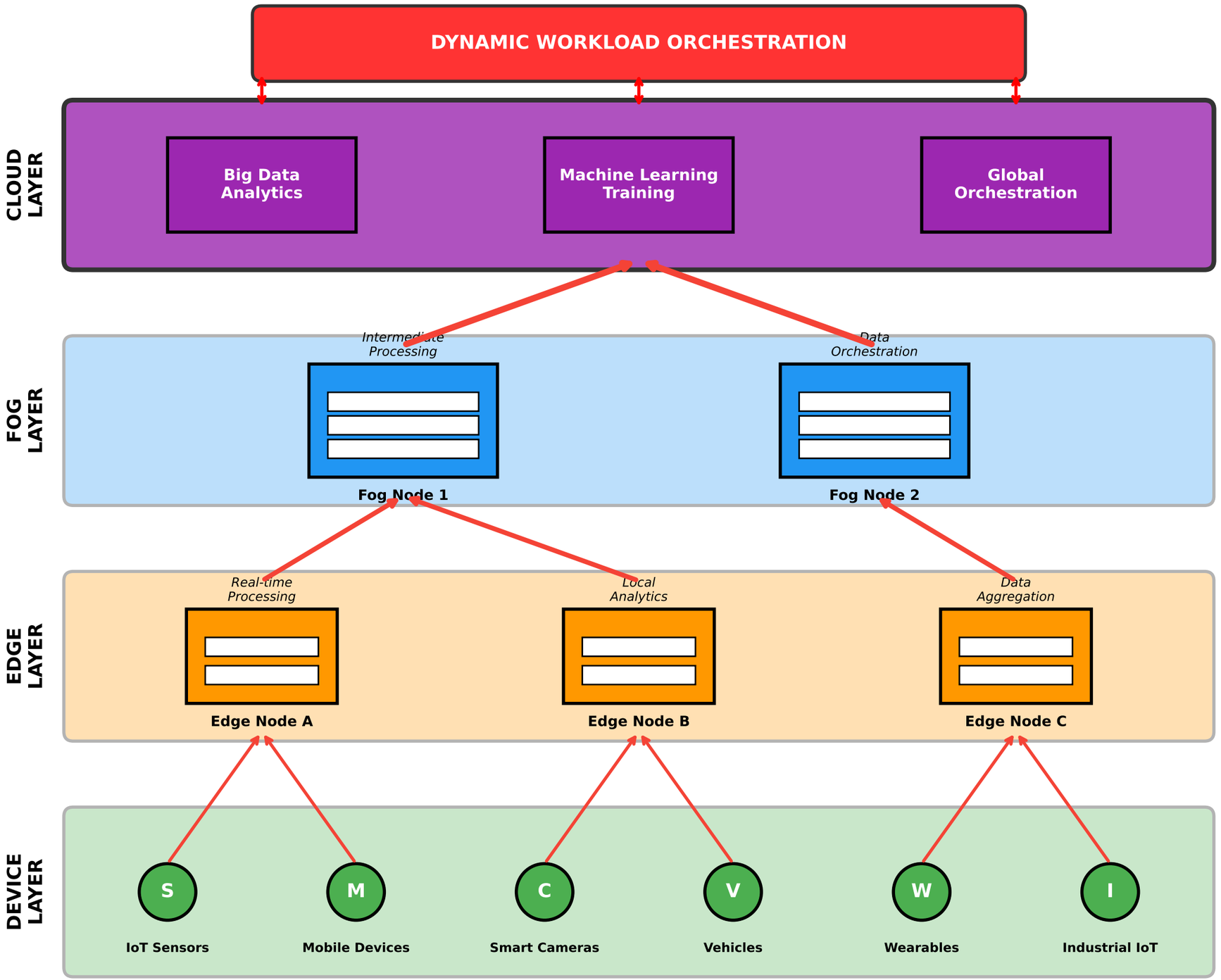
Hybrid Cloud-Edge Architecture: Multi-Tier Distributed Computing



WORKLOAD DISTRIBUTION

DEVICE LAYER:
- Data Collection
- Basic Filtering
- Immediate Response

EDGE LAYER:
- Real-time Processing
- Local Decision Making
- Sensor Fusion

FOG LAYER:
- Intermediate Analytics
- Data Aggregation
- Regional Coordination

CLOUD LAYER:
- Complex Analytics
- ML Model Training
- Global Optimization
- Long-term Storage

LATENCY & PROCESSING
Device: <1ms, Low Power
Edge: 1-10ms, Moderate
Fog: 10-100ms, High
Cloud: 100ms+, Unlimited