# This page contains the following errors:

error on line 98 at column 58: xmlParseEntityRef: no name

Below is a rendering of the page up to the first error.

### FIGURE 3: Al-Driven Smart Contract Behavioral Analysis

# Smart Contract Deployment

- Contract bytecode
   Function signatures
- State variables
   Event definitions

### Behavioral Pattern Extraction

Code Analysis:

- Execution Patterns:
- Gas consumption patterns
   State transition analysis

### Al Behavioral Validation

Machine Learning Models:

- Behavioral Scoring:
- Risk assessment
   Compliance validation

### Threat Detection Engine

Vulnerability Scanning:

- Reentrancy attacks
   Integer overflow/underflow
   Access control issues
- Malicious Pattern Detection:
- - Ponzi schemes
     Backdoor analysis

#### Runtime Behavioral Monitoring

Execution Analysis:

- Transaction patterns
   Gas usage monitoring
   Event emission patterns
- State Change Monitoring:

   Variable modification tracking

# Cryptographic Behavioral Validation

Quantum-Safe Signatures:

CRYSTALS-Dilithium validation
 Behavioral proof generation
 Integrity verification

Cryptographic Attestation:

• Behavioral hash commitment

