

SEMANTIC ANALYSIS

Purpose: Analyze the semantic content of documents to identify topics, terms, and their relationships.

Steps:

1. **Term Frequency Analysis** - Calculate frequency of terms and phrases
2. **Co-occurrence Detection** - Identify terms that frequently appear together
3. **Topic Modeling** - Discover topics and themes across documents
4. **Topic Tracking** - Track how topics evolve across documents

Outputs:

- Term frequency statistics
- Co-occurrence matrices
- Topic clusters
- Topic evolution data

Dependencies:

- Foundation Analysis Phase

STRUCTRAL ANALYSIS

Purpose: Analyze the structural elements of legal arguments and reasoning.

Steps:

1. **IRAC Component Identification** - Identify Issues, Rules, Applications, Conclusions
2. **Toulmin Model Analysis** - Identify Claims, Data, Warrants, Backing
3. **Legal Precedent Matching** - Connect arguments to relevant case law
4. **Citation Analysis** - Analyze the network of legal citations

Outputs:

- Structured IRAC components
- Structured Toulmin model components
- Relevant precedents
- Citation network

Dependencies:

- Foundation Analysis Phase

RELATIONAL ANALYSIS

Purpose: Map relationships between entities and identify patterns in these relationships.

Steps:

1. **Relationship Mapping** - Create graph of relationships between entities
2. **Knowledge Graph Construction** - Build comprehensive knowledge graph
3. **Cross-document Relationship Analysis** - Analyze relationships across documents

Outputs:

- Entity relationship graph
- Knowledge graph
- Cross-document relationship data

Dependencies:

- Foundation Analysis Phase

PATTERN ANALYSIS

Purpose: Identify patterns, trends, and anomalies across documents and entities.

Steps:

1. **Pattern Detection** - Identify recurring patterns in documents and entities
2. **Similarity Analysis** - Find similar documents, entities, and arguments
3. **Anomaly Detection** - Identify outliers and unusual patterns
4. **Trend Analysis** - Track how patterns evolve over time

Outputs:

- Identified patterns
- Similarity matrices
- Anomaly reports
- Trend data

Dependencies:

- Semantic Analysis Phase
- Relational Analysis Phase

LEGAL ANALYSIS

Purpose: Analyze legal issues, violations, and contradictions.

Steps:

1. **Violation Detection** - Identify Brady violations, fabricated evidence, misconduct
2. **Contradiction Detection** - Identify contradictions between statements/documents
3. **Causal Chain Reasoning** - Establish causal relationships between events/actions

Outputs:

- Detected violations
- Identified contradictions
- Causal chains

Dependencies:

- Structural Analysis Phase
- Pattern Analysis Phase

COMPLIANCE ANALYSIS

Purpose: Generate strategic recommendations and motion suggestions.

Steps:

1. **Strategy Generation** - Develop legal strategies based on all analyses
2. **Motion Recommendation** - Suggest specific motions
3. **Outcome Prediction** - Predict potential outcomes of different strategies

Outputs:

- Strategic recommendations
- Suggested motions
- Outcome predictions

Dependencies:

- Pattern Analysis Phase
- Legal Analysis Phase
- Compliance Analysis Phase

