Grammar Analysis

Identifying the Connected Components

- All LHS connected components are identified and are ***motifs*** for the rule.
- The set of unique motifs are the fundamental patterns in the grammar.
- The ***component match set*** stores all instances of component matches.
- Combinations of matched instances of motifs are the rule instances.
- Rule instances are stored in the ***rule match set***.
- Taken together, these two sets are the ***match data structure***.

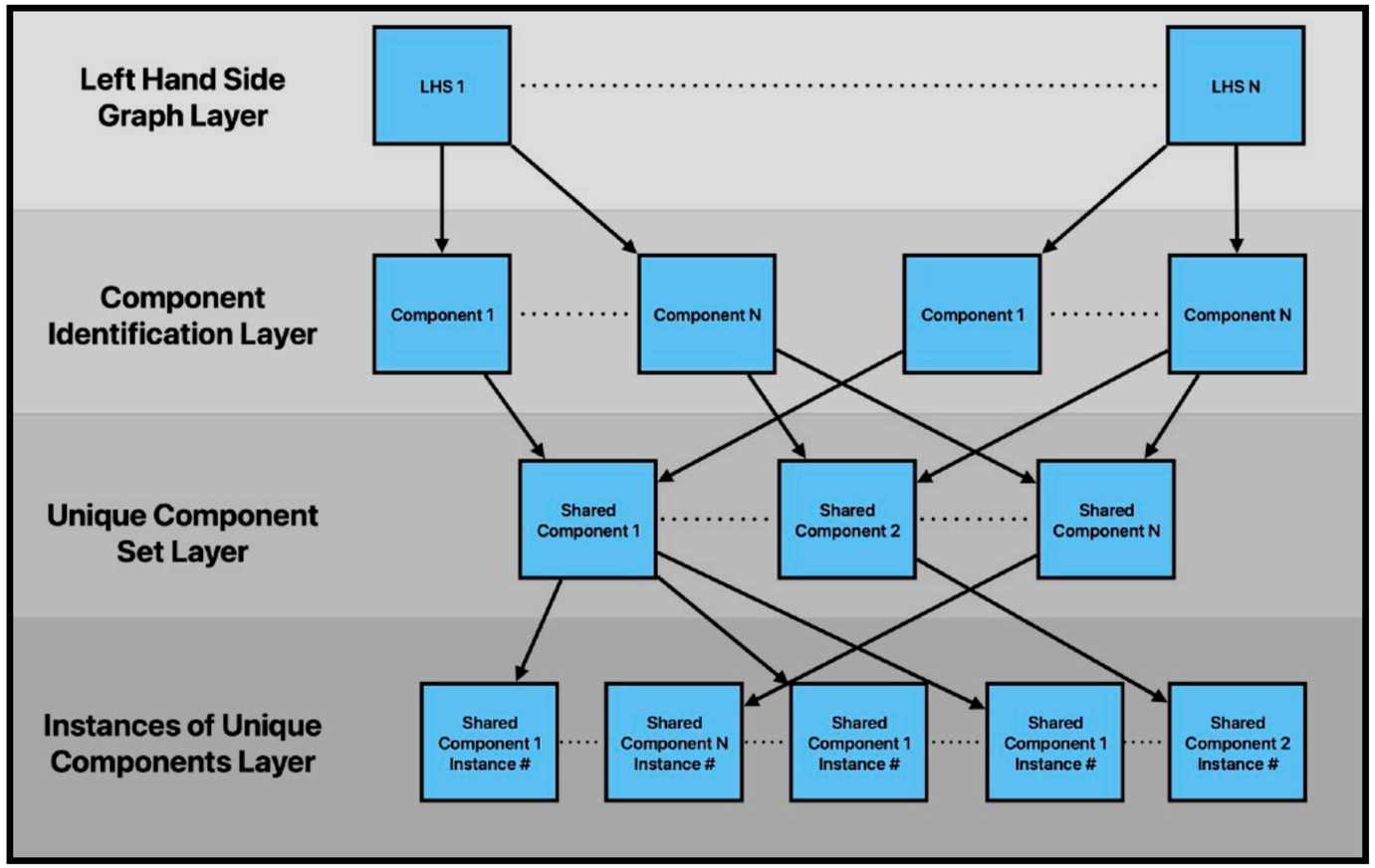

Figure 22: An overview of the “parsing” process and how component matches are stored.

Subgraph Pattern Recognition

Finding Graphs of the LHS.

- To find subgraph matches isomorphic to our search pattern, we find injective graph homomorphisms.
- For the search pattern, a rooted spanning tree (RST) is generated.
- The RST and other constraints are used to find matches in the graph.
- Combinations of search patterns are used to find matches for LHS graphs.

Sources: (Valiente, 2021), (Carletti et al., 2018), Medwedeff and Mjolsness) and more in thesis.

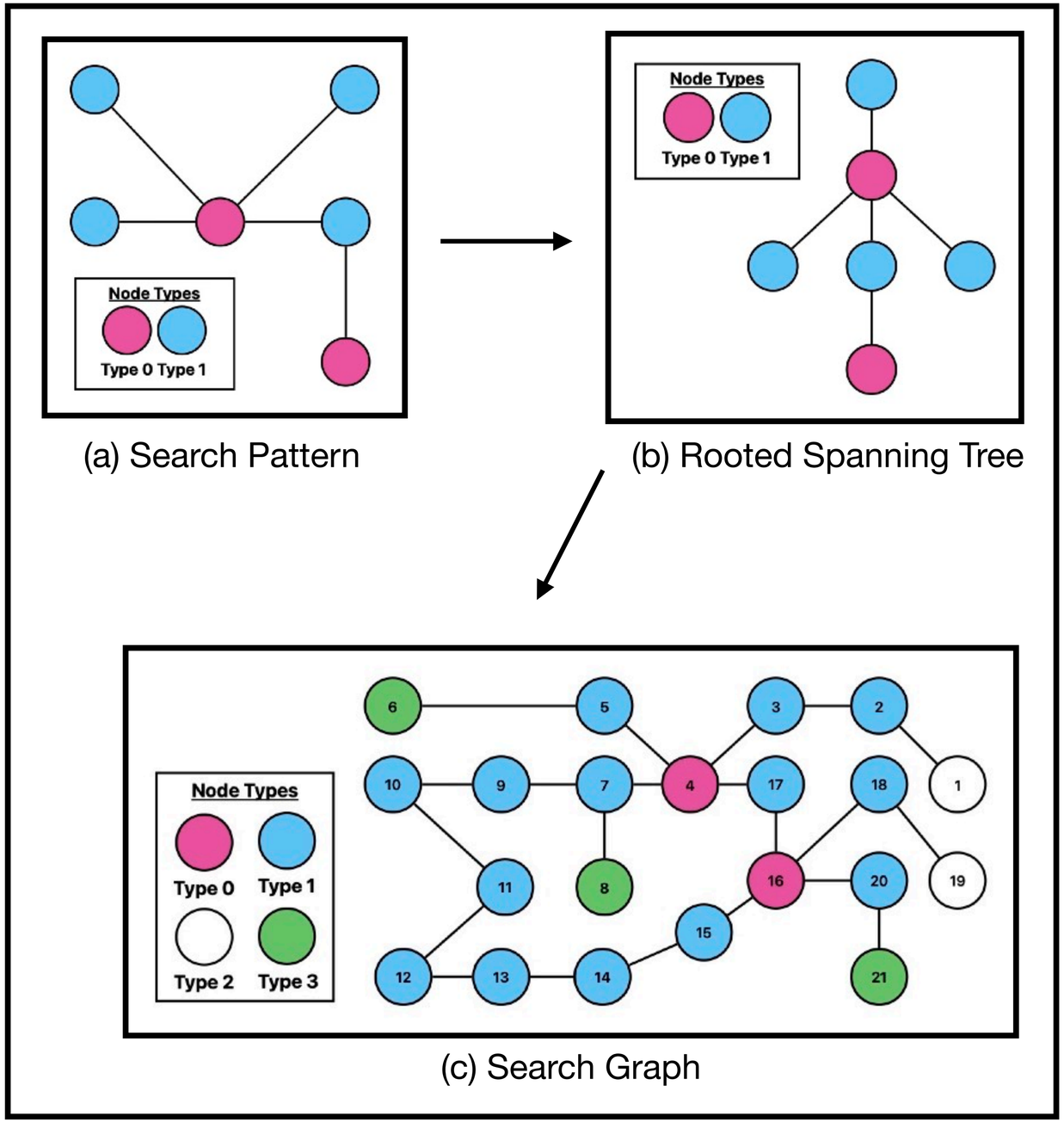

Figure 23: Search Process