UNIVERSITY OF WATERLOO
Department of Electrical and Computer Engineering

Locating Design Patterns in Distributed Systems

Christopher Trudeau
ctrudeau@etude.uwaterloo.ca

Parallel and Distributed Systems Research Group

slides by *SlickSlides*

Motivation

- Design Patterns touted as next software Mecca
- Need to verify the existence in industry
- Use legacy code to
  - Validate currently recognized patterns
  - Find new patterns

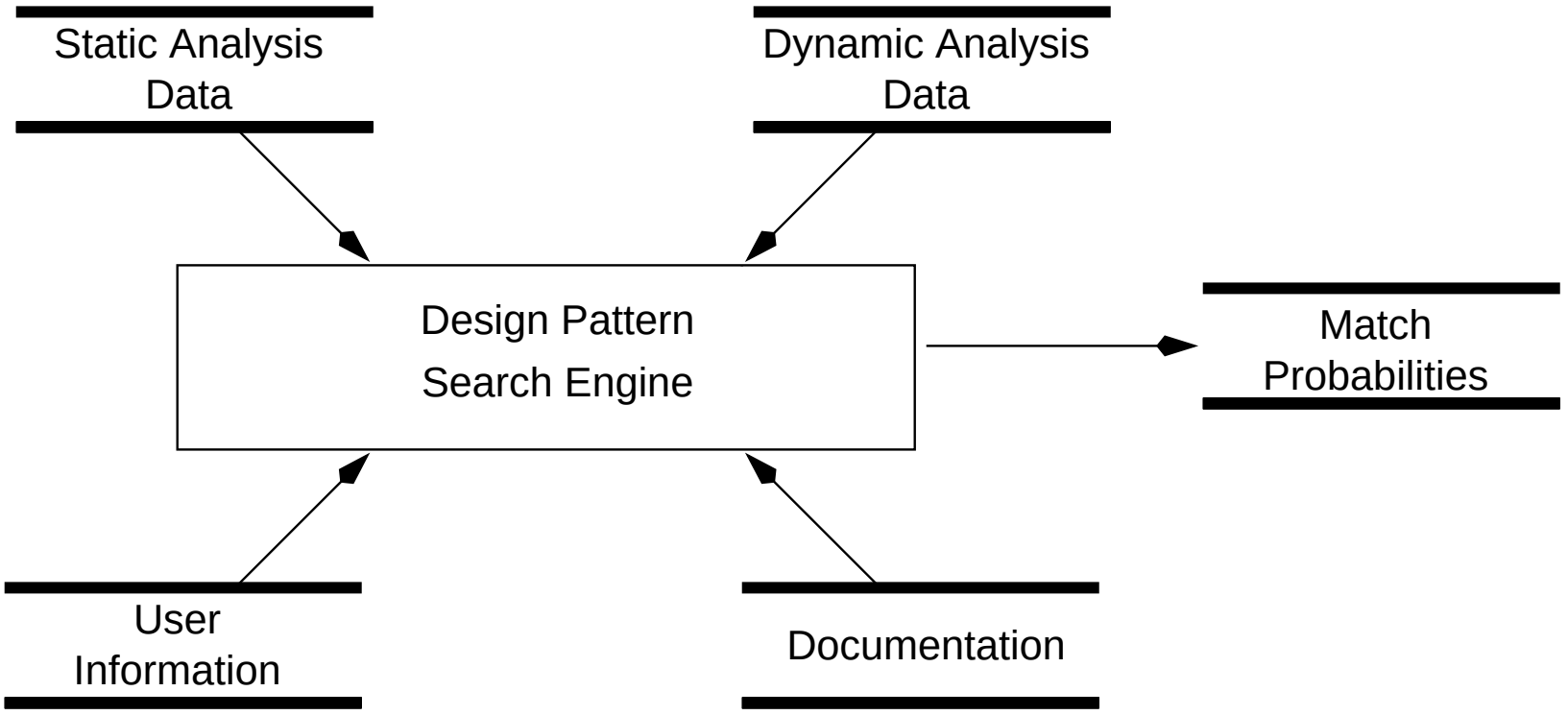
Goal

- Create a system to semi-automatically recognize design patterns in legacy code
- Focus on patterns in distributed systems
- Create a high level abstract description language which characterizes patterns

Proposed System

- Consolidates system information:
  - Static compile-time data
  - Dynamic run-time data
  - User data
  - Information from existing documentation
- Determines matching probabilities of patterns using:
  - Pattern characteristic language
  - Consolidated system information
  - Heuristics

System Architecture



Tools

- Refine
- Existing syntax description language ACL allows generic specification of language constructs
- Augment ACL to include:
  - Abstraction layer which specifies patterns
  - Library of reference patterns
  - Ability to specify pattern interaction