

Degree of Pattern Specificity

Complete

Implicit

Minimal

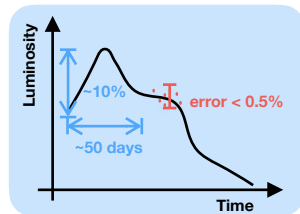
Pattern Location

In-the-head

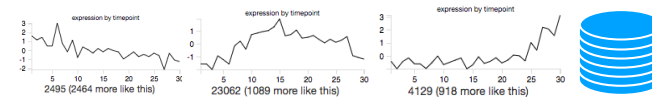
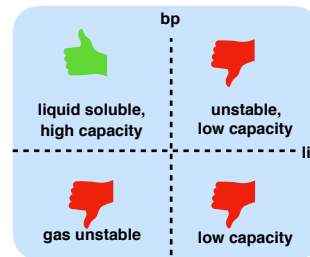
Partial

External

Design Challenge



Top-down
Pattern Specification



“repressed” “transient” “induced”



Mechanism

Key
Component

Feature

Exact
Specification

Approximate
Specification

Range
Selection

Flexible
Matching

Context Creation

Controls

Filter

Group
Comparison

Bottom-up
Data-driven Inquiry

Concept
Querying

Result
Querying

Recommendation

sketch-to-query

sketch-to-modify

input
equation

Smoothing

Ignore x

narrow x

change similarity metric

show
scatter

reverse y

change number of
displayed results

change cluster size

change axis

filter

dynamic class

Pattern Upload

drag-and-drop

representative and outliers