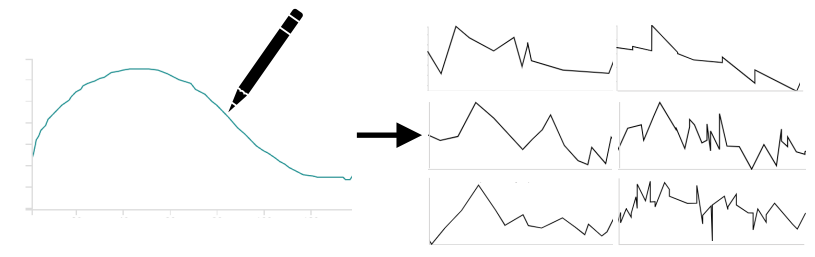
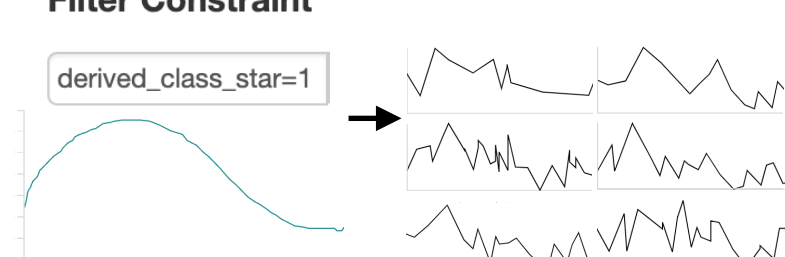
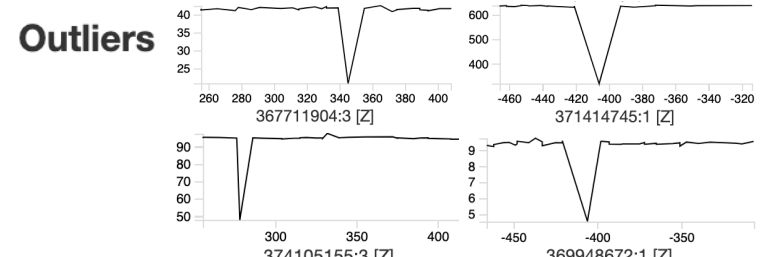
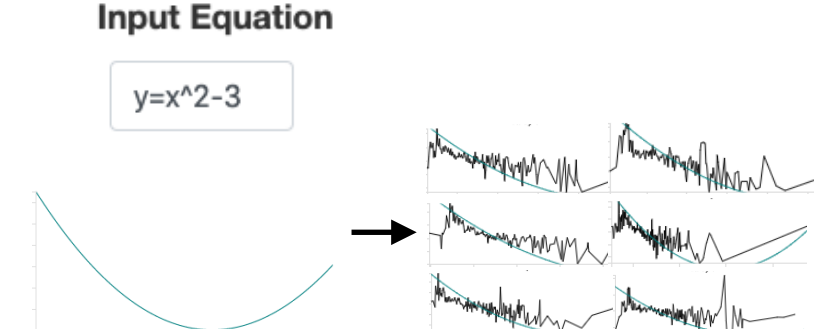
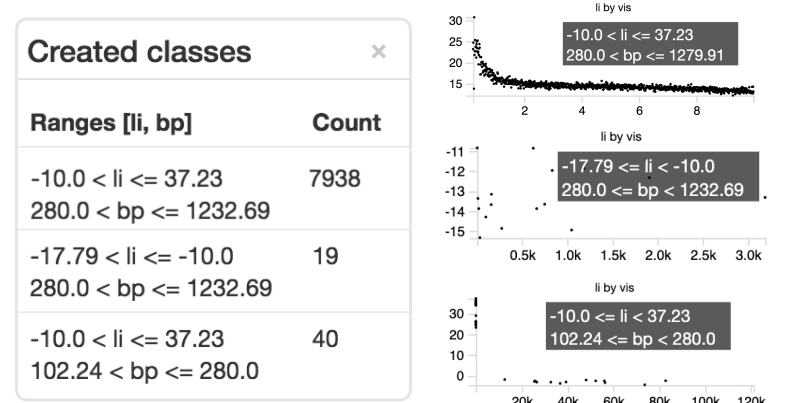
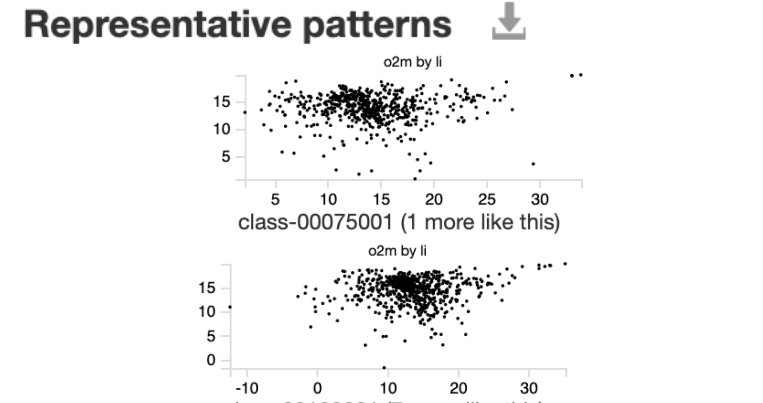
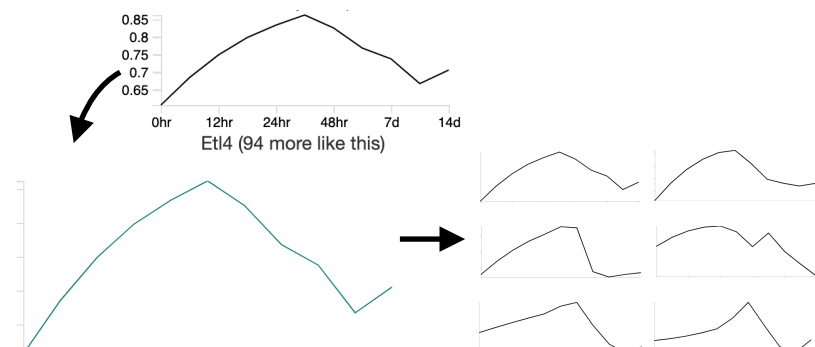
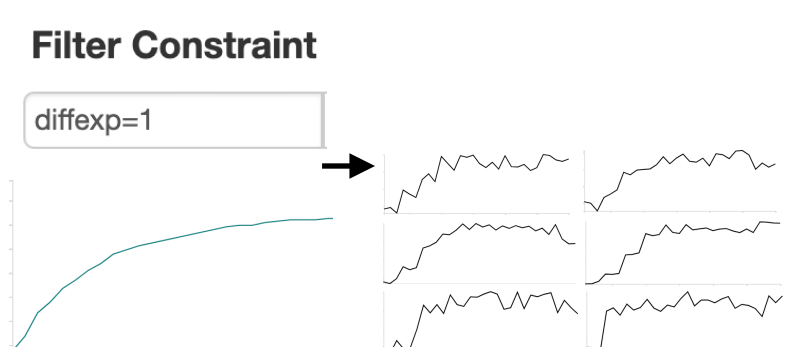
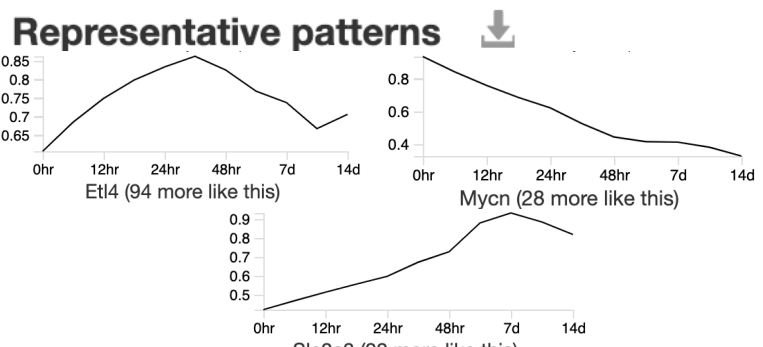


## Sensemaking Process

|   | Top-Down  | Context Creation   | Bottom-Up  |       |  |      |   |    |   |    |   |
|---|---|--|--|-------|--|------|---|----|---|----|---|
| Astronomy                                     | <p><b>Goal:</b> Discover potential supernovae candidates that exhibits peak-then-decay pattern</p>    | <p><b>Support:</b> Examine data regions that are more likely to have supernovae candidates</p> <p><b>Filter Constraint</b></p> <div>derived_class_star=1</div>    | <p><b>Support:</b> <i>Identify and eliminate sources of data anomaly to improve match accuracy for finding candidates</i></p> <p><b>Outliers</b></p>  |       |  |      |   |    |   |    |   |
| Material Science                              | <p><b>Support:</b> <i>Find data classes that follows desired functional pattern to understand which solvent types exhibit certain tradeoffs and relationships</i></p> <p><b>Input Equation</b></p> <div>y=x^2-3</div>  | <p><b>Goal:</b> <i>Compare characteristics from different data classes to find a solvent that satisfies desirable properties</i></p> <p><b>Created classes</b></p> <table><thead><tr><th>Ranges [li, bp]</th><th>Count</th></tr></thead><tbody><tr><td>-10.0 &lt; li &lt;= 37.23<br/>280.0 &lt; bp &lt;= 1232.69</td><td>7938</td></tr><tr><td>-17.79 &lt; li &lt;= -10.0<br/>280.0 &lt; bp &lt;= 1232.69</td><td>19</td></tr><tr><td>-10.0 &lt; li &lt;= 37.23<br/>102.24 &lt; bp &lt;= 280.0</td><td>40</td></tr></tbody></table>  | Ranges [li, bp]  | Count | -10.0 < li <= 37.23<br>280.0 < bp <= 1232.69 | 7938 | -17.79 < li <= -10.0<br>280.0 < bp <= 1232.69 | 19 | -10.0 < li <= 37.23<br>102.24 < bp <= 280.0 | 40 | <p><b>Support:</b> <i>Understand the overall tradeoffs and relationships between data attributes</i></p> <p><b>Representative patterns</b></p>  |
| Ranges [li, bp]                               | Count   |  |  |       |  |      |   |    |   |    |   |
| -10.0 < li <= 37.23<br>280.0 < bp <= 1232.69  | 7938  |  |  |       |  |      |   |    |   |    |   |
| -17.79 < li <= -10.0<br>280.0 < bp <= 1232.69 | 19  |  |  |       |  |      |   |    |   |    |   |
| -10.0 < li <= 37.23<br>102.24 < bp <= 280.0   | 40  |  |  |       |  |      |   |    |   |    |   |
| Genetics                                      | <p><b>Support:</b> <i>Search and browse for genes belonging to the same cluster</i></p>   | <p><b>Support:</b> <i>Compare known properties of genes belonging to different clusters</i></p> <p><b>Filter Constraint</b></p> <div>diffexp=1</div>    | <p><b>Goal:</b> <i>Understand characteristic pattern profiles in the dataset</i></p> <p><b>Representative patterns</b></p>                          |       |  |      |   |    |   |    |   |