

# Strategy Evaluation Results

## Summary

Total Strategy Combinations	2
Total Test Cases	10000
Timestamp	2026-02-12 16:46:00

## Strategy Performance

### *RULE\_BASED NLP + DIJKSTRA Path Finder*

#### *Classification Metrics*

Accuracy	70.09% (7009/10000)
Precision (CORRECT)	72.02%
Recall (CORRECT)	81.35%
F1 Score (CORRECT)	76.40%

#### *Per-Category Accuracy*

Category	Accuracy
CORRECT	81.35%
NOT_FRENCH	19.85%
NOT_TRIP	93.92%

#### *Pipeline Timing*

Avg Execution Time	18.87 ms
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<b>Median Execution Time</b>	17.58 ms
<b>P95 Execution Time</b>	27.36 ms
<b>Min Execution Time</b>	15.10 ms
<b>Max Execution Time</b>	40.26 ms
<b>Std Dev</b>	3.51 ms

### *NLP Results*

<b>Inputs Processed</b>	10000
<b>Successfully Extracted</b>	6723
<b>Extraction Errors</b>	3277
<b>Avg Extraction Time</b>	18.27 ms
<b>Median Extraction Time</b>	16.95 ms
<b>P95 Extraction Time</b>	26.42 ms

### *Path Finder Results*

<b>Paths Computed</b>	6723
<b>Avg Computation Time</b>	0.60 ms
<b>Median Computation Time</b>	0.23 ms
<b>P95 Computation Time</b>	1.93 ms
<b>Avg Path Length</b>	9.33 stations

### *HF\_NER NLP + DIJKSTRA Path Finder*

#### *Classification Metrics*

<b>Accuracy</b>	52.35% (5235/10000)
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<b>Precision (CORRECT)</b>	72.14%
<b>Recall (CORRECT)</b>	32.49%
<b>F1 Score (CORRECT)</b>	44.80%

### *Per-Category Accuracy*

Category	Accuracy
CORRECT	32.49%
NOT_FRENCH	66.15%
NOT_TRIP	100.00%

### *Pipeline Timing*

<b>Avg Execution Time</b>	34.44 ms
<b>Median Execution Time</b>	35.32 ms
<b>P95 Execution Time</b>	42.48 ms
<b>Min Execution Time</b>	17.20 ms
<b>Max Execution Time</b>	2608.06 ms
<b>Std Dev</b>	26.58 ms

### *NLP Results*

<b>Inputs Processed</b>	10000
<b>Successfully Extracted</b>	2681
<b>Extraction Errors</b>	7319
<b>Avg Extraction Time</b>	33.97 ms
<b>Median Extraction Time</b>	34.82 ms

<b>P95 Extraction Time</b>	41.71 ms
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***Path Finder Results***

<b>Paths Computed</b>	2681
<b>Avg Computation Time</b>	0.48 ms
<b>Median Computation Time</b>	0.00 ms
<b>P95 Computation Time</b>	2.79 ms
<b>Avg Path Length</b>	11.29 stations

## Results Per Strategy

### NLP Results (Global)

The NLP component extracts departure and arrival stations from user input.

<b>Total Inputs Processed</b>	20000
<b>Successfully Extracted</b>	9404
<b>Extraction Errors</b>	10596
<b>Avg Extraction Time</b>	26.12 ms
<b>Median Extraction Time</b>	24.37 ms
<b>P95 Extraction Time</b>	40.07 ms

### Path Finder Results (Global)

The path finder computes the shortest route between two stations.

<b>Total Paths Computed</b>	9404
<b>Avg Path Computation Time</b>	1.14 ms
<b>Avg Path Length</b>	9.89 stations

### Pipeline Results

End-to-end pipeline performance combining NLP and path finding.

<b>Total Pipeline Executions</b>	20000
<b>Avg Total Time</b>	26.66 ms
<b>Median Total Time</b>	25.02 ms
<b>P95 Total Time</b>	40.79 ms
<b>Min Total Time</b>	15.10 ms
<b>Max Total Time</b>	2608.06 ms

<b>Std Dev</b>	20.49 ms
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