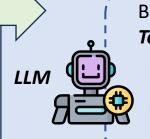**Stage-0: Sample Input**

Query (x)
I'm considering investing and I'd like to know what's happening in the market right now.
Could you get me the top market trends in the US?

Tools (T)

Stage-2: Function Calling Generation Using Generated Reasoning

Based on the **Reasoning** (r), **Query** (x), **Tools** (T), the function calling(s):

LLM

Generated Function Calling (y')
Market Trends API(...)

Stage-1: Reasoning Chains Construction

Label (y) *(Training)*
Market Trends API(trend_type="MARKET_INDEXES", country="us")

LLM

Curriculum/Template (c)
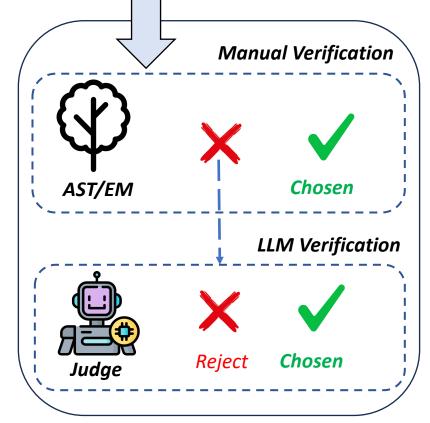(1) Identify function(s)...
(2) Decision on relevancy...
(3) Examine function documentation(s)...
(4) Extract and validate users' query...
(5) Conversion to fit function(s)...
...

Reasoning (r)
1. ...the "Market Trends API" seems to be the most relevant as ...
...
4. Required parameter are:
   - trend_type: required..
   - country: optional, default to "us"
   - language: optional, ...
...

Stage-3: Training Sample Filtering

Manual Verification

AST/EM

✗ ✓ *Chosen*

LLM Verification

Judge

✗ *Reject* ✓ *Chosen*