## Encoding Seed Instructions

**Base Prompt**

You are asked to generate diverse sets of instructions and outputs using PyBGPStream library.
Requirements:
1. Instructions should include analysis with record collection, MOAS (Multiple Origin AS) prefixes, Measuring AS path inflation,
…
Here are the parameters of PyBGPStream library, and the filter rules with their abbreviations:
1. project: The name of the project from which to collect BGP data. It accepts string values that list one or more projects or collectors separated by commas: "ris,route-views"
…
Here is a complete example of the instruction and the output:

**Seed Instructions**

**Instruction**: "Collect BGP update data for the target prefix (41.221.215.0/24) over a specified collection period …"

**Input: "**Target Prefix: 41.221.215.0/24
Total Collection Period: 900 seconds (15 minutes)"

**Output**:

```
import pybgpstream
import pandas as pd
import time

target_prefix =
"41.221.215.0/24"
prefix_announcements_df =
pd.DataFrame(columns=['Time',
'AS Path', 'Count'])
withdrawals_df =
pd.DataFrame(columns=['Time',
'AS Path', 'Count'])...
```

Creating Batches of Prompts

**IP Routing Analysis Instruction Pool**

Feeding Prompts to OpenAI's PM

**OpenAI's PM**

Generating New Instructions

**Instruction**: "Perform time-series analysis of AS path length and preference value through live stream data sources from RouteViews suit of collectors."

**Input: "**Collectors: route-views2, route-views3, route-views4, ris-ripe
Record Type: updates"

**Output**:

```
import pybgpstream

as_path_lengths = []
preference_values = []

stream = pybgpstream.BGPStream(
    from_time="2020-10-01 00:00:00",
    until_time="2020-10-31 00:00:00",
    collectors=["route-views2",
"route-views3", "route-views4",
"ris-ripe"],
    record_type="updates"
)
…
```

Rouge-L Score above 70%

No

Yes

**Instruction**: "Perform time-series analysis of AS path length and preference value through live stream data sources from RouteViews suit of collectors."

**Input: "**Collectors: route-views2, route-views3, route-views4, ris-ripe
Record Type: updates"

**Instruction**: "Retrieve BGP update data for the specified IP prefix (41.221.215.0/24) over a designated collection period of 900 seconds, equivalent to 15 minutes. Within each 5-minute interval during the collection …"
**Input: "**IP Prefix: 41.221.215.0/24; Total Collection Duration: 900 seconds (15 minutes)"

Save

Discard

Filtering