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In [1]: import pandas as pd
import numpy as np
from scipy import stats
import plotly.express as px
import plotly.graph_objects as go
from plotly.subplots import make_subplots
pd.set_option('max_columns', None)
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In [2]: df_groupby_user = pd.read_csv('data_groupby_user.csv', index_col=0)
df_groupby_user.shape
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Out[2]: (21264, 3)
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In [3]: df1 = df_groupby_user[['agent', 'request_sum']]
# sort by request size
df1 = df1.sort_values(by=['request_sum'], ascending=False)
df1 = df1['request_sum'].reset_index()
df1 = df1.drop(['index'], axis=1)
# calculate cumulative sum
df1['request_size_cumulative'] = df1.cumsum()
df1['request_size_cumulative'] = df1['request_size_cumulative']/pow(1024,4)
# calculate percentage
total_size = df1.iloc[-1]['request_size_cumulative']
df1['percentage'] = df1['request_size_cumulative'] / total_size
df1 = df1.reset_index()
# convert x to percentage
total_user = df1.shape[0]
df1['idx_percentage'] = df1['index'] / total_user
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In [4]: total_size
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Out[4]: 5.736327559936399
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In [5]: # find percentage of id corresponding 80% of request
# df1[(df1['percentage']>0.799)&(df1['percentage']<0.801)]
# 0.057
```

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In [6]: fig = px.line(df1, x="idx_percentage", y="request_size_cumulative", title='Cumulative traffic by agent')

fig.update_layout(xaxis=dict(tickformat=".0%"))
fig.update_xaxes(title="agent (sorted by request size descending)")
fig.update_yaxes(title="cumulative traffic in TB")

fig.add_hline(y=total_size*0.8, line_width=1, line_dash="dash", line_color="grey",
              annotation_text="80% of total traffic",
              annotation_position="bottom right")
fig.add_vline(x=0.057, line_width=1, line_dash="dash", line_color="grey",
              annotation_text="5.7% of total agent",
              annotation_position="bottom right")

fig.show()
```

Cumulative traffic by agent

