jupyter Stockpocalypse Last Checkpoint: 19 hours ago

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Code

JupyterLab Python 3 (ipykernel)

[1]:
```
import os
import pandas as pd
from synthetic_generator_core import SyntheticRareEventGenerator
from synthetic_generator_core import generate_market_shock_dataset

# ----------------------------
# 🗂️ 1. Ensure Output Folders
# ----------------------------
os.makedirs("synthetic_datasets", exist_ok=True)
os.makedirs("market_shock_datasets", exist_ok=True)
```

[3]:
```
# ----------------------------
# ✅ 2. Manual Configs
# ----------------------------

# Stock Prediction Dataset
gen_stock = SyntheticRareEventGenerator(
    n_samples=5000,
    n_features=15,
    imbalance_ratio=0.5,
    noise_level=0.1,
    concept_drift=0.0,
    rare_event_weight=0.0,
    seed=42
)

df_stock = gen_stock.generate()
df_stock = gen_stock.add_noise(df_stock)
SyntheticRareEventGenerator.save_to_csv(df_stock, "synthetic_datasets/stock_prediction_clean.csv")

# Market Shock Dataset
gen_shock = SyntheticRareEventGenerator(
    n_samples=5000,
    n_features=15,
    imbalance_ratio=0.02,
    noise_level=0.3,
    concept_drift=0.6,
    rare_event_weight=0.8,
    seed=99
)

df_shock = gen_shock.generate()
df_shock = gen_shock.add_noise(df_shock)
df_shock = gen_shock.inject_drift(df_shock)
SyntheticRareEventGenerator.save_to_csv(df_shock, "synthetic_datasets/market_shock_sim.csv")
```

[5]:
```
# ----------------------------
# 🔁 3. Batch Generation
# ----------------------------

difficulty_levels = ["easy", "medium", "hard", "extreme"]
seeds_per_level = [1, 2, 3]

for level in difficulty_levels:
    for seed in seeds_per_level:
        df = generate_market_shock_dataset(difficulty=level, random_state=seed)
        filename = f"marketshock_{level}_s{seed}.csv"
        filepath = os.path.join("market_shock_datasets", filename)
        df.to_csv(filepath, index=False)
        print(f"[✅] Saved {filename}")
```

```
[✅] Saved marketshock_easy_s1.csv
[✅] Saved marketshock_easy_s2.csv
[✅] Saved marketshock_easy_s3.csv
[✅] Saved marketshock_medium_s1.csv
[✅] Saved marketshock_medium_s2.csv
[✅] Saved marketshock_medium_s3.csv
[✅] Saved marketshock_hard_s1.csv
[✅] Saved marketshock_hard_s2.csv
[✅] Saved marketshock_hard_s3.csv
[✅] Saved marketshock_extreme_s1.csv
[✅] Saved marketshock_extreme_s2.csv
[✅] Saved marketshock_extreme_s3.csv
```

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