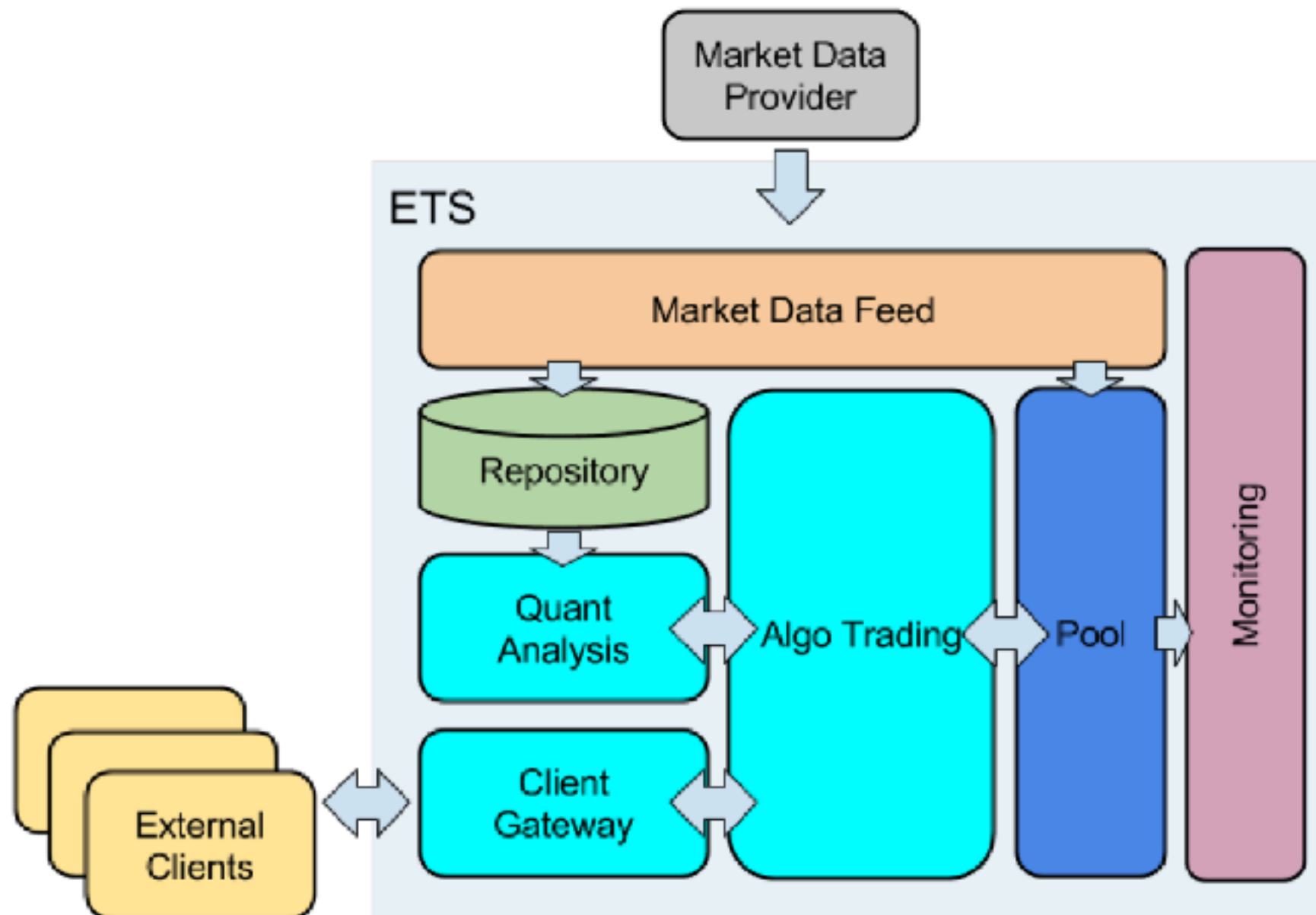# Algorithm Trading

Guodong Shen

# Team Members

- Guodong Shen (Team Leader)

- Jian Chen

- Yiqun Xiao

- Xu Qiu

- Bench Shao

- Ruihong Yan

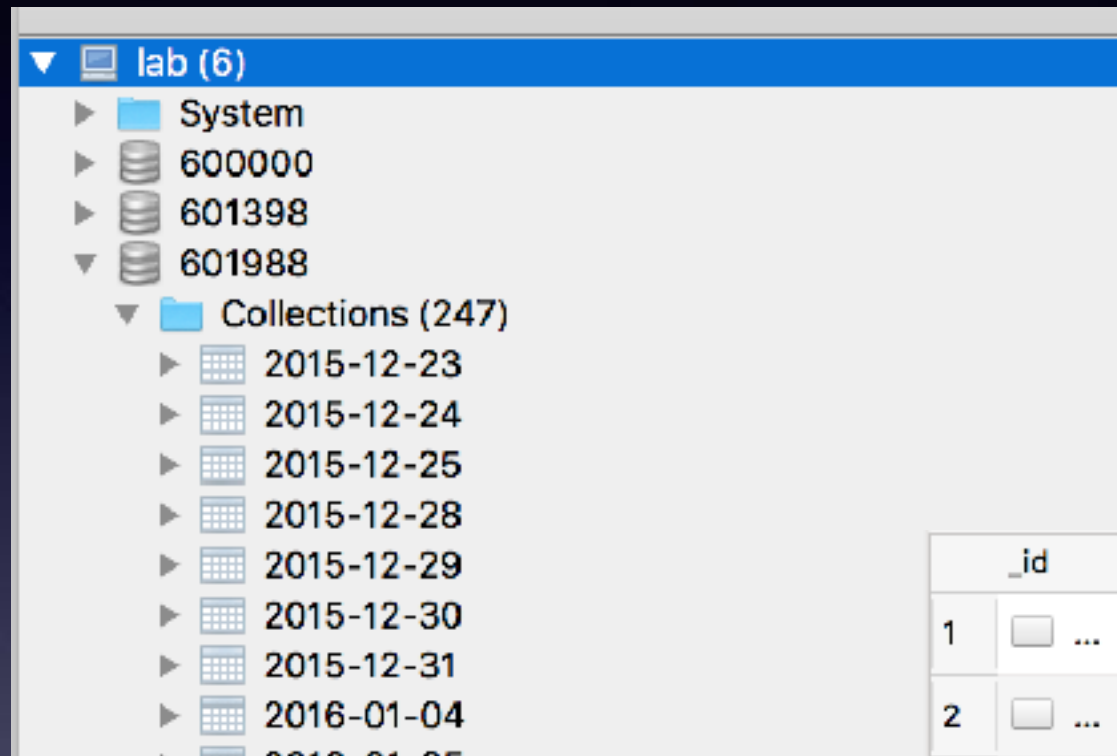# Project Design

# Database



historical tick data



realtime quotes
&
user orders

# Database-MongoDB

# Database-Redis



| | 150 |
| --- | --- |
| | db0 (3/3) |
| | 600000 |
| | 601398 |
| | 601988 |
| | db1 (1/1) |
| | 123456 |

| row | value |
| --- | --- |
| 1 | {"b2_v": "73686", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 2 | {"b2_v": "73729", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 3 | {"b2_v": "74093", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 4 | {"b2_v": "74272", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 5 | {"b2_v": "74417", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 6 | {"b2_v": "74454", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 7 | {"b2_v": "74474", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 8 | {"b2_v": "74593", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 9 | {"b2_v": "74654", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |
| 10 | {"b2_v": "74594", "a1_p": "4.390", "name": "\u5de5\u5546\u94f6\u884c", "high": "4.390", "a2_p": " |

| row | value |
| --- | --- |
| 1 | {"policy": [[["09:40:00", "09:41:30"], ["09:40:54", 186.0]], [["09:41:30", "09:43:00"], ["09:42:01", 202.0]], [["09:43:00", "09:44:30"], ["09:43:47", 205.0]], [["09:44:30", ... |

# Policy

- TWAP

- VWAP

- VWAP_with_predict

# VWAP

- using mean value of n days

- random time choose in a time interval
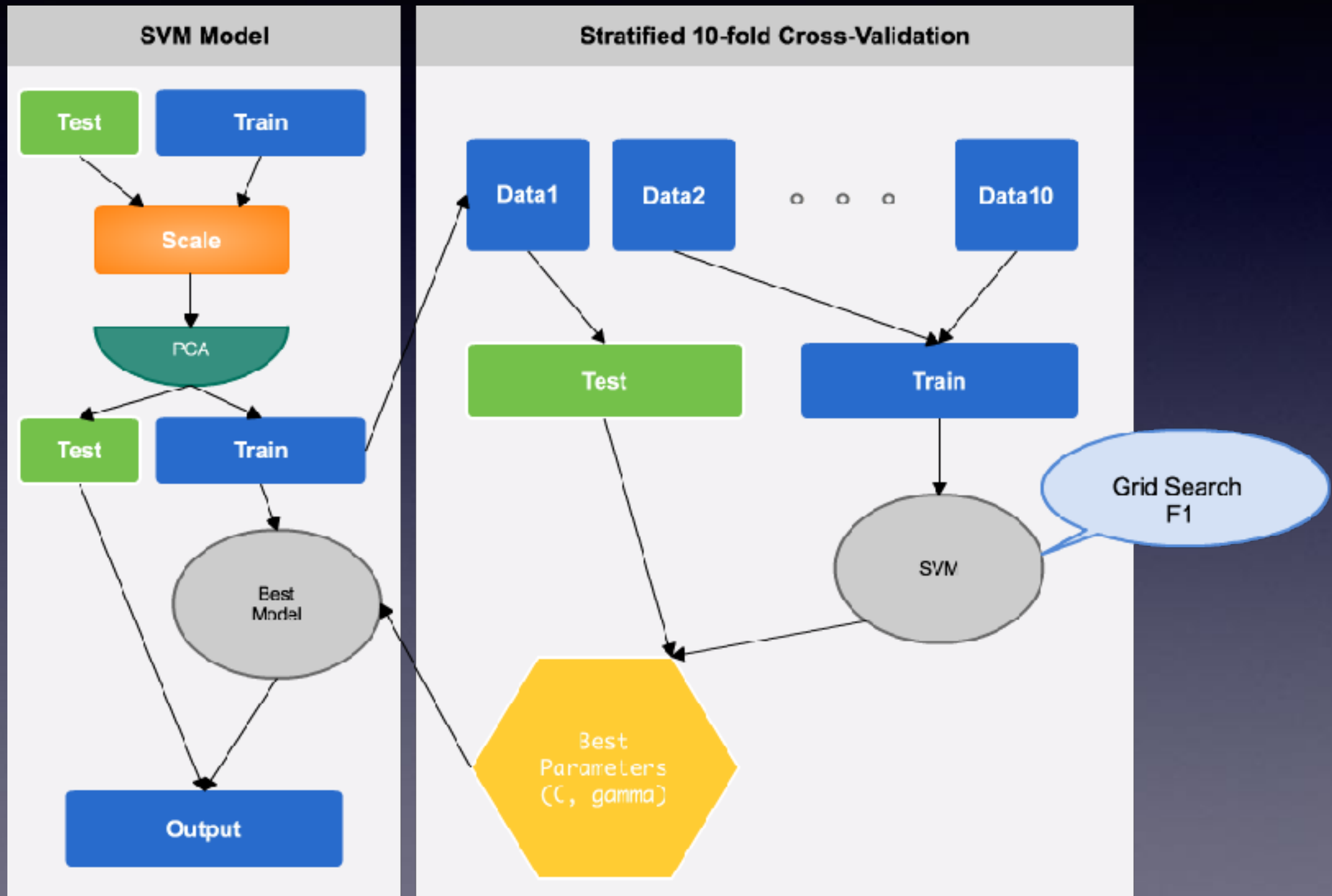
# VWAP

```
{
    "policy": [
        [(09:40:00, 09:50:00), (09:41:30, 186]),
        [(09:50:00, 10:00:00), (09:54:32, 250]),
        ...
    ],
    "order_type": "buy",
    "wap": "vwap",
    "day": "2016-12-22",
    "stock": "601398"
}
```

# VWAP-with-predict

- predict order amount in a time interval

- predict the trend in the next minutes

- predict the trend of tomorrow

- postpone order sometimes

# VWAP-with-predict

# Order Match

```
C:\software\Anaconda3\python.exe C:/Project/Course/Algotrading/algo_trading/libs/OrderMatch.py
order_point:09:56:30
random_num : 0.9334230910000844
2016-12-28 13:16:30,604 WARNING:123456在09:56:30时刻要买入的关于601398股票的一单失败
threshold : 0.4
order_point:09:57:33
random_num : 0.3399528881791736
threshold : 0.4
TimeOut

order_point:09:58:51
random_num : 0.0099041694546041
threshold : 0.4
TimeOut

order_point:10:00:41
random_num : 0.8162246485547936
threshold : 0.4
match!!!
```

"Demostration"