

[Contest](#)[Community](#)[Research](#)[Algorithms](#)[Help](#)

Code your algorithm. Make money with it.

Quantopian provides capital, technology, data, and community. Everything you need to be successful.

Start Coding

Quantopian

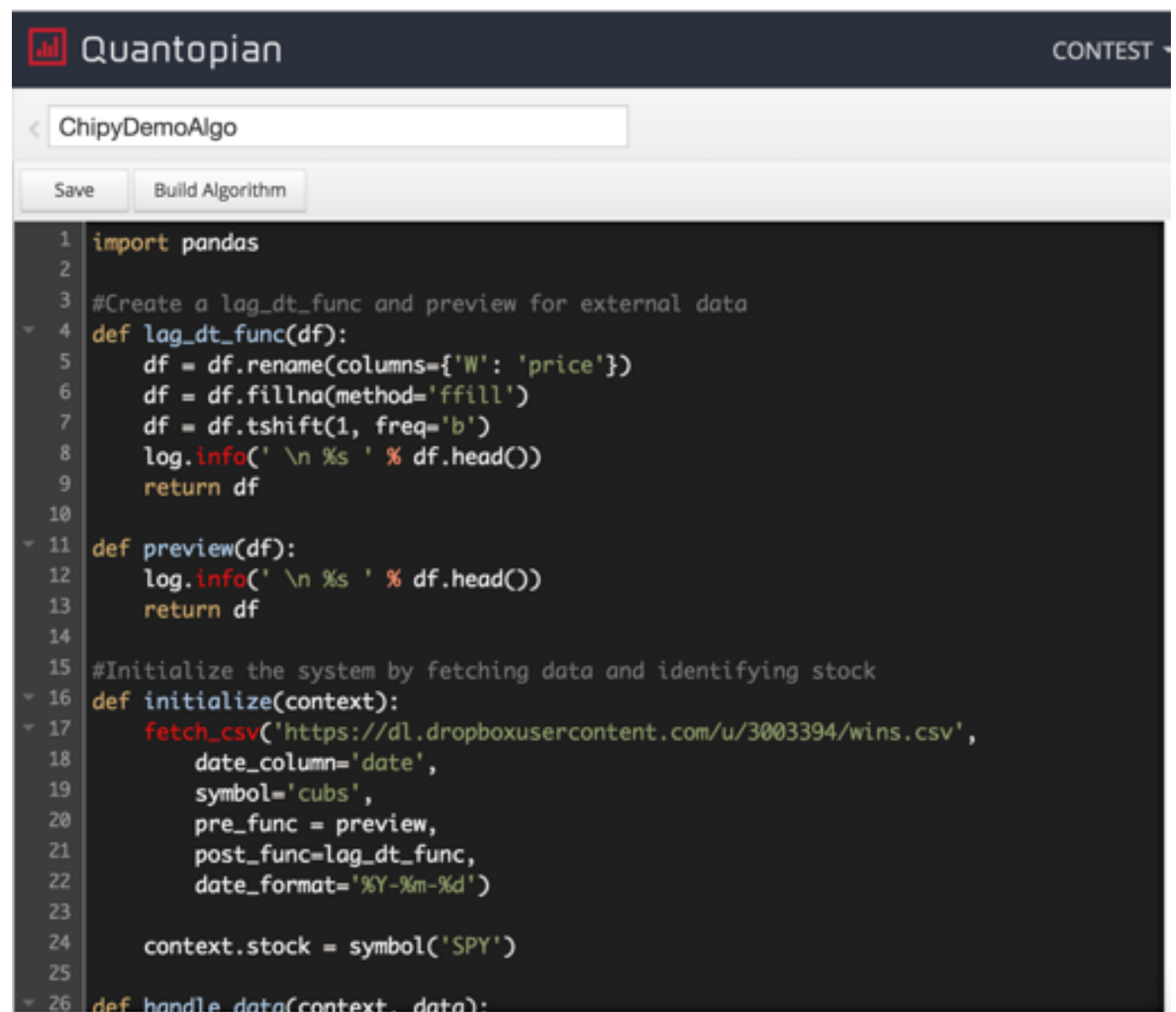
Chipy - September 2015

Setup

- Github: [davidkunio/chipy-quantopian](#)
- iPython Notebook
- Quantopian IDE/Backtest: Research backtests

Agenda

- Quantopian Overview
- Quantopian IDE Example
- Backtest Examples



The screenshot displays the Quantopian IDE interface. At the top, the 'Quantopian' logo is on the left, and a 'CONTEST' dropdown menu is on the right. Below the header, a search bar contains the text 'ChippyDemoAlgo'. Underneath the search bar are two buttons: 'Save' and 'Build Algorithm'. The main area of the IDE is a dark-themed code editor showing a Python script. The script is as follows:

```
1 import pandas
2
3 #Create a lag_dt_func and preview for external data
4 def lag_dt_func(df):
5     df = df.rename(columns={'W': 'price'})
6     df = df.fillna(method='ffill')
7     df = df.tshift(1, freq='b')
8     log.info(' \n %s ' % df.head())
9     return df
10
11 def preview(df):
12     log.info(' \n %s ' % df.head())
13     return df
14
15 #Initialize the system by fetching data and identifying stock
16 def initialize(context):
17     fetch_csv('https://dl.dropboxusercontent.com/u/3003394/wins.csv',
18             date_column='date',
19             symbol='cubs',
20             pre_func = preview,
21             post_func=lag_dt_func,
22             date_format='%Y-%m-%d')
23
24     context.stock = symbol('SPY')
25
26 def handle_data(context, data):
```

Quantopian is...

- Platform for building investment strategies
- Jupyter based IDE + Custom Backtest Module
- Powered by open-source: Zipline
- Connected to a broker (IB) for live trading
- Surprisingly active forum

Quantopian isn't...

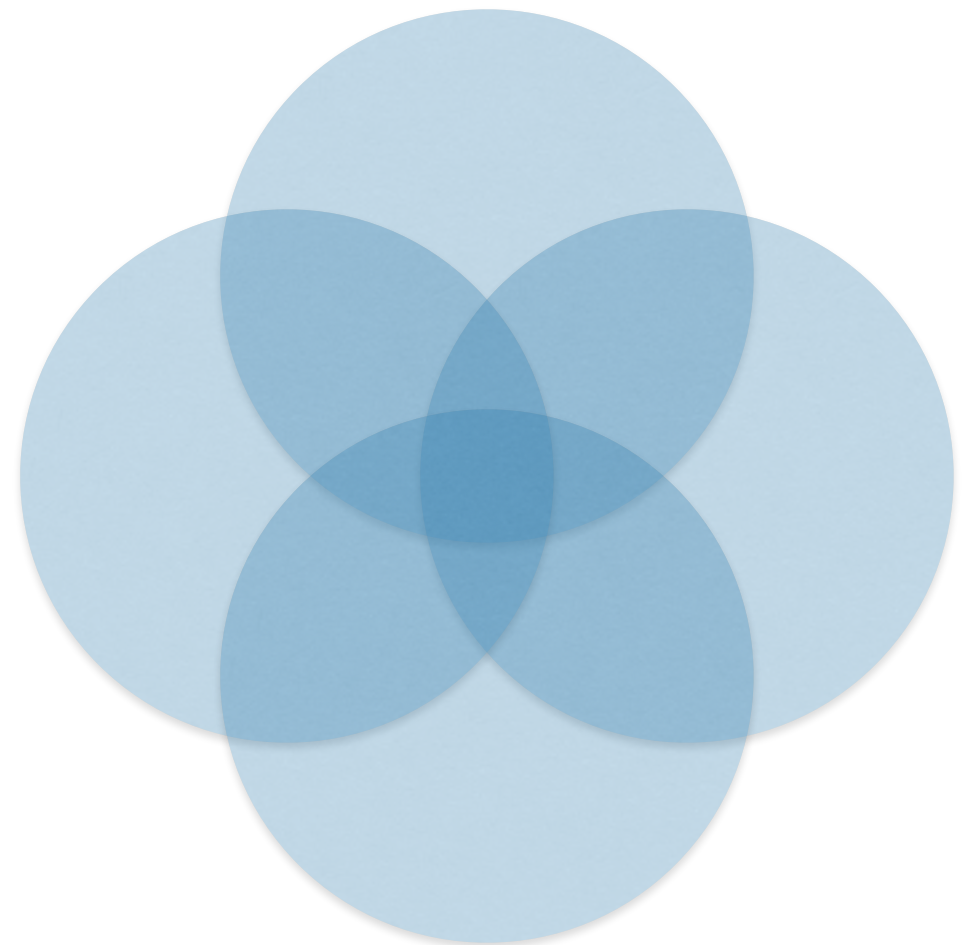
- Setup for High Frequency Trading (HFT)
- Fully open to the python development stack. There are integrated packages and a package white list system
- Multi asset class. US Equity/ETF Cash
- Limited Data: Namex per minute + Morningstar Fundamentals (Can access http hosted CSV files)

Quantopian is trying to...

- Crowd source a hedge fund
- Incentivize people to share their strategies.
- Contest

Quantopian needs a multi-dimensional person.

- Finance knowledge (or at least some intuition)
- Python skills
- Hacker skills
- Access to tradable capital



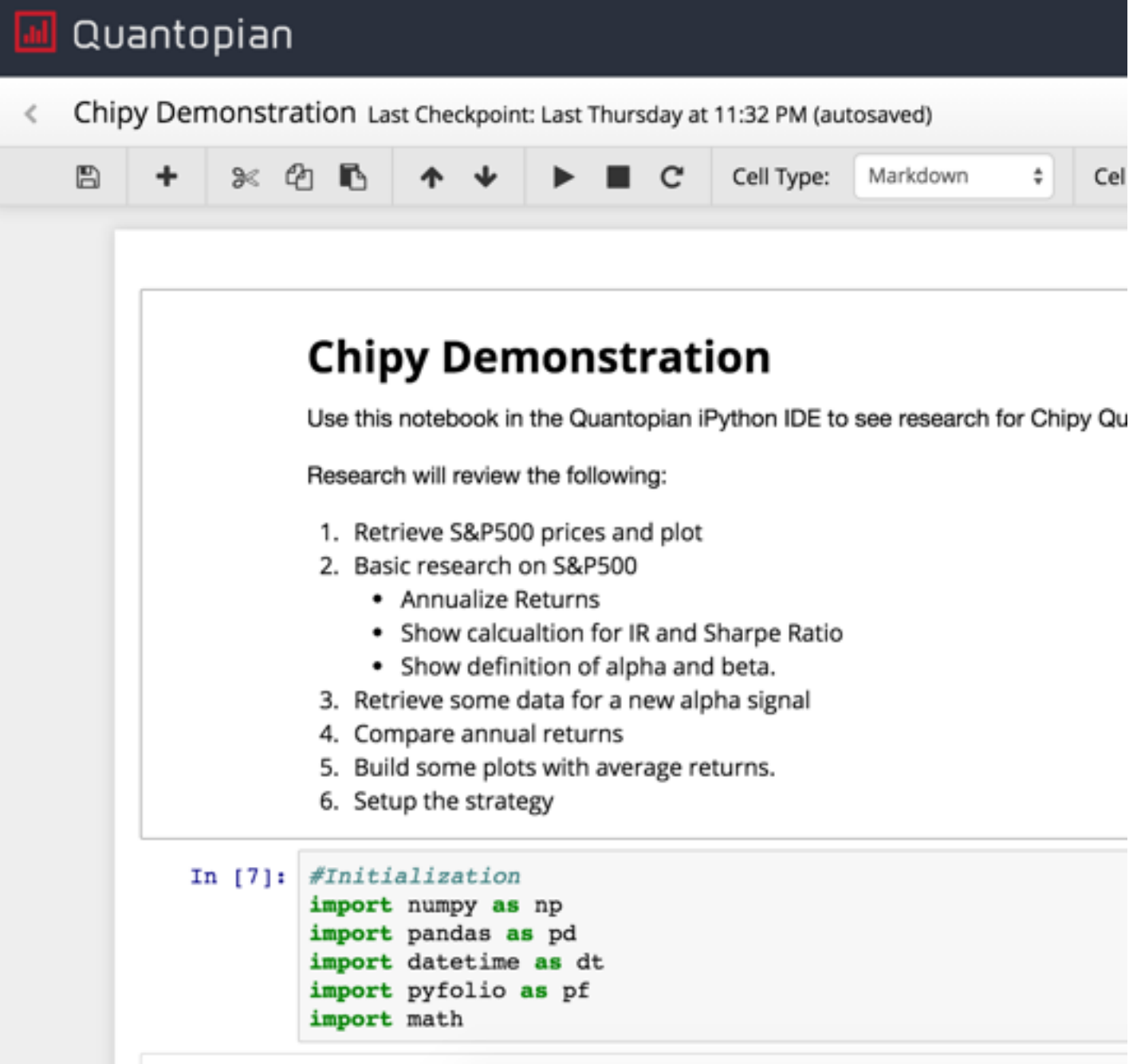
Lets take a tour

Researching in Quantopian

| Strength | Weakness |
|---------------------------------|-------------------------|
| Access to Quantopian API | Limited package support |
| Integrated Dynamic Coding tools | No environment support |
| Strong user support | |
| | |

Research

- Explore in the tool
- External Data
- Researching a strategy
- Live Code Example!



The screenshot displays the Quantopian iPython IDE interface. At the top, the header shows the Quantopian logo and the notebook title 'Chipy Demonstration' with a subtitle 'Last Checkpoint: Last Thursday at 11:32 PM (autosaved)'. Below the header is a toolbar with icons for file operations (save, new, open, close, copy, paste) and execution (run, stop, refresh). The 'Cell Type' dropdown is set to 'Markdown'. The main content area shows a notebook cell with the title 'Chipy Demonstration' and the following text:

Use this notebook in the Quantopian iPython IDE to see research for Chipy Qu

Research will review the following:

1. Retrieve S&P500 prices and plot
2. Basic research on S&P500
 - Annualize Returns
 - Show calculation for IR and Sharpe Ratio
 - Show definition of alpha and beta.
3. Retrieve some data for a new alpha signal
4. Compare annual returns
5. Build some plots with average returns.
6. Setup the strategy

Below the notebook cell, a code cell is shown with the following Python code:

```
In [7]: #Initialization
import numpy as np
import pandas as pd
import datetime as dt
import pyfolio as pf
import math
```

Backtest

< ChipyDemoAlgo

< All Backtests

Algorithm

Backtest

Settings: From 2004-01-01 to 2015-09-02 with \$1,000,000 initial capital (daily data)

Live Trade Algorithm

Share Results



Status: ✓ Backtest complete

Results Overview

Transaction Details

Daily Positions & Gains

Log Output

RISK METRICS

Returns

Benchmark Returns

Treasury Returns

Alpha

Beta

Sharpe

Sortino

Information Ratio

Total Returns 80.3% Benchmark Returns 118.7% Alpha 0.02 Beta 0.37 Sharpe 0.40 Sortino 0.46 Information Ratio -0.28 Volatility 0.12 Max Drawdown 23.3%

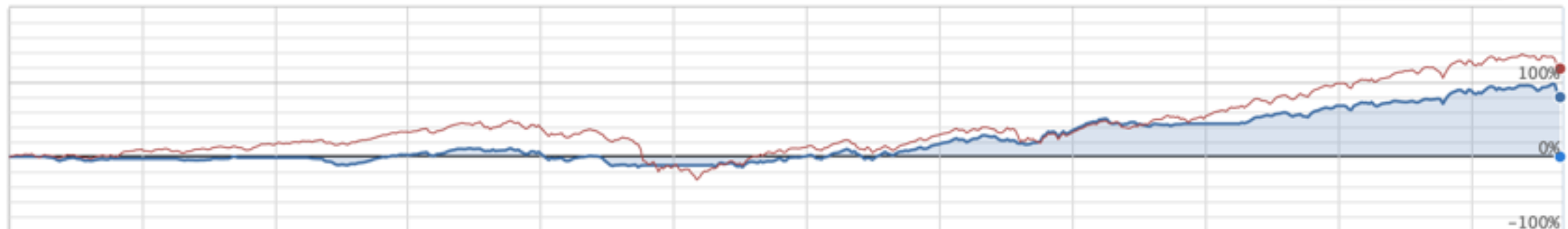
Cumulative performance: ■ Algorithm 79.73% ■ Benchmark (SPY) 118%

Week of Aug 30, 2015

Week

Month

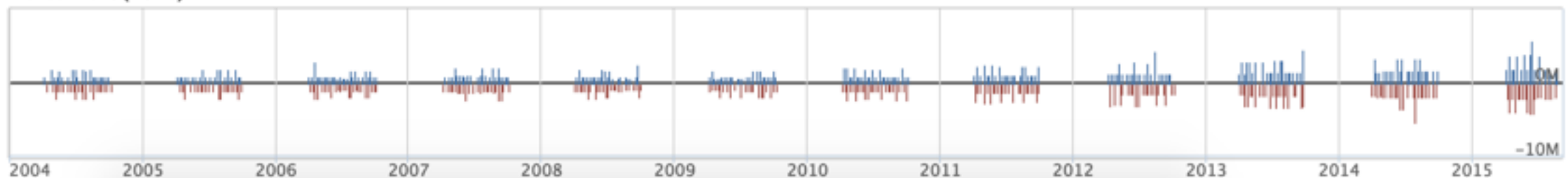
All



Weekly returns (\$35,234)



Transactions (none)



Some thoughts

- Use the forums
- Clone Algorithms
- Fundamental Strategies are somewhat unexplored

- github.com/davidkunio/chipy-quantopian
- github.com/quantopian/zipline
- <https://www.youtube.com/watch?v=DcSM8IFKrTs>
- https://www.youtube.com/watch?v=nCKzRY_JV4c