

[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

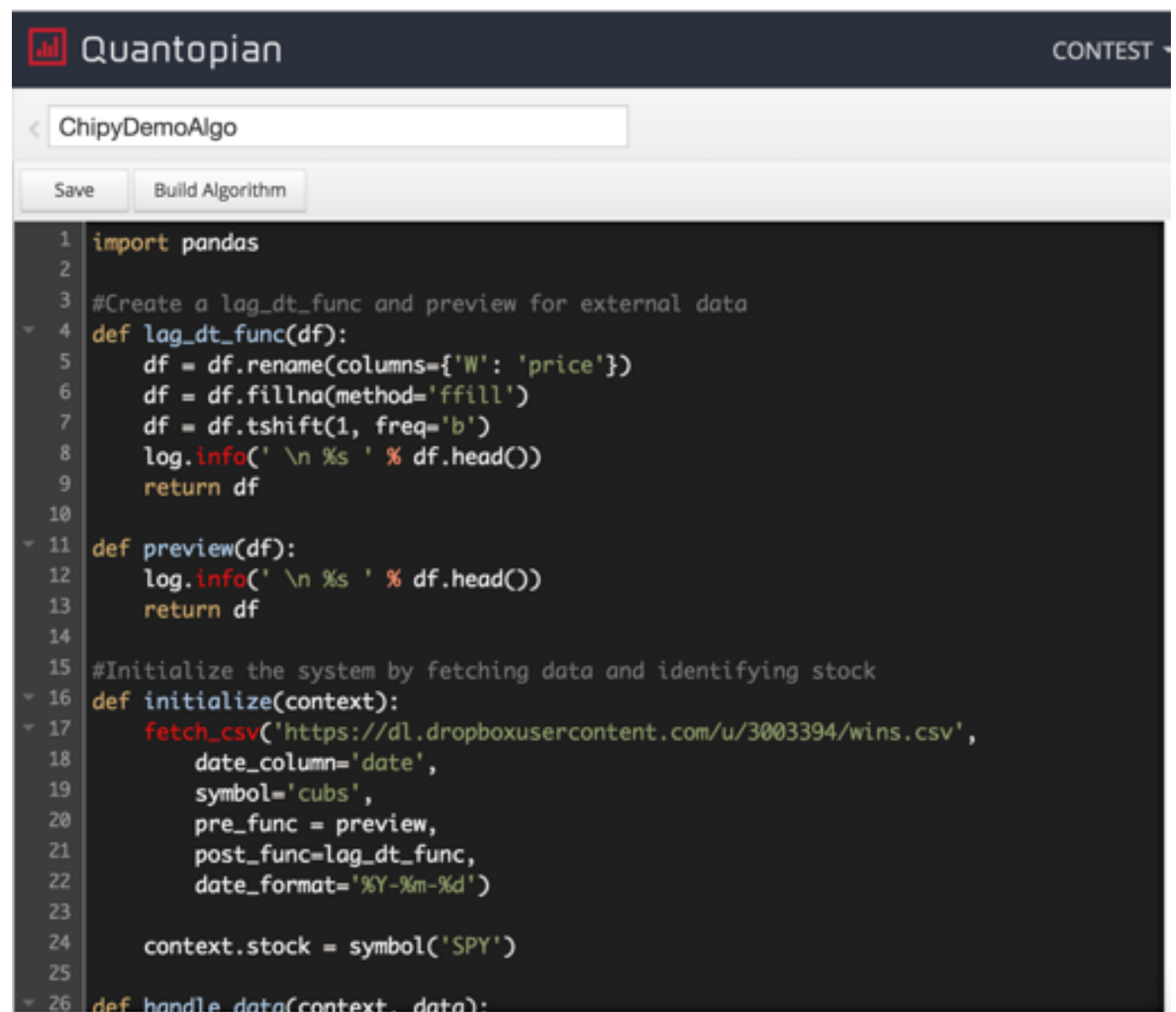
Chipy - September 2015

Setup

- Github: davidkunio/chipy-quantopian
- iPython Notebook
- Quantopian IDE/Backtest: Research backtests
- Slack: <https://chipy-slack-invites.herokuapp.com/>

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 - no install necessary. High powered batteries included
- Powered by open-source: Zipline
- Connected to a broker (IB) for live trading
- Surprisingly active forum

Quantopian isn't...

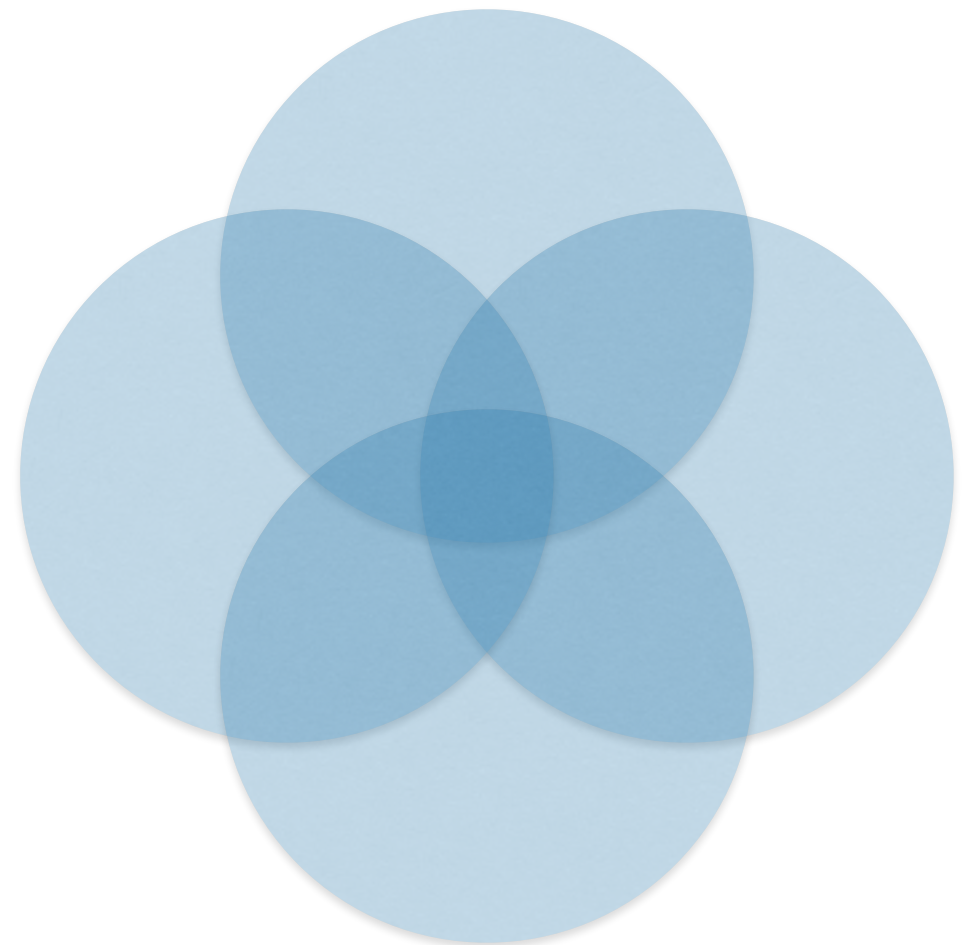
- Setup for High Frequency Trading (HFT) - per minute
- Fully open to the python development stack. There are integrated packages and a package white list system
- Multi asset class. US Equity/ETF Cash
- Limited Data: Namex per minute + Morningstar Fundamentals (Can access http hosted CSV files)

Quantopian is trying to...

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

Quantopian needs a multi-dimensional person.

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



Researching in Quantopian

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

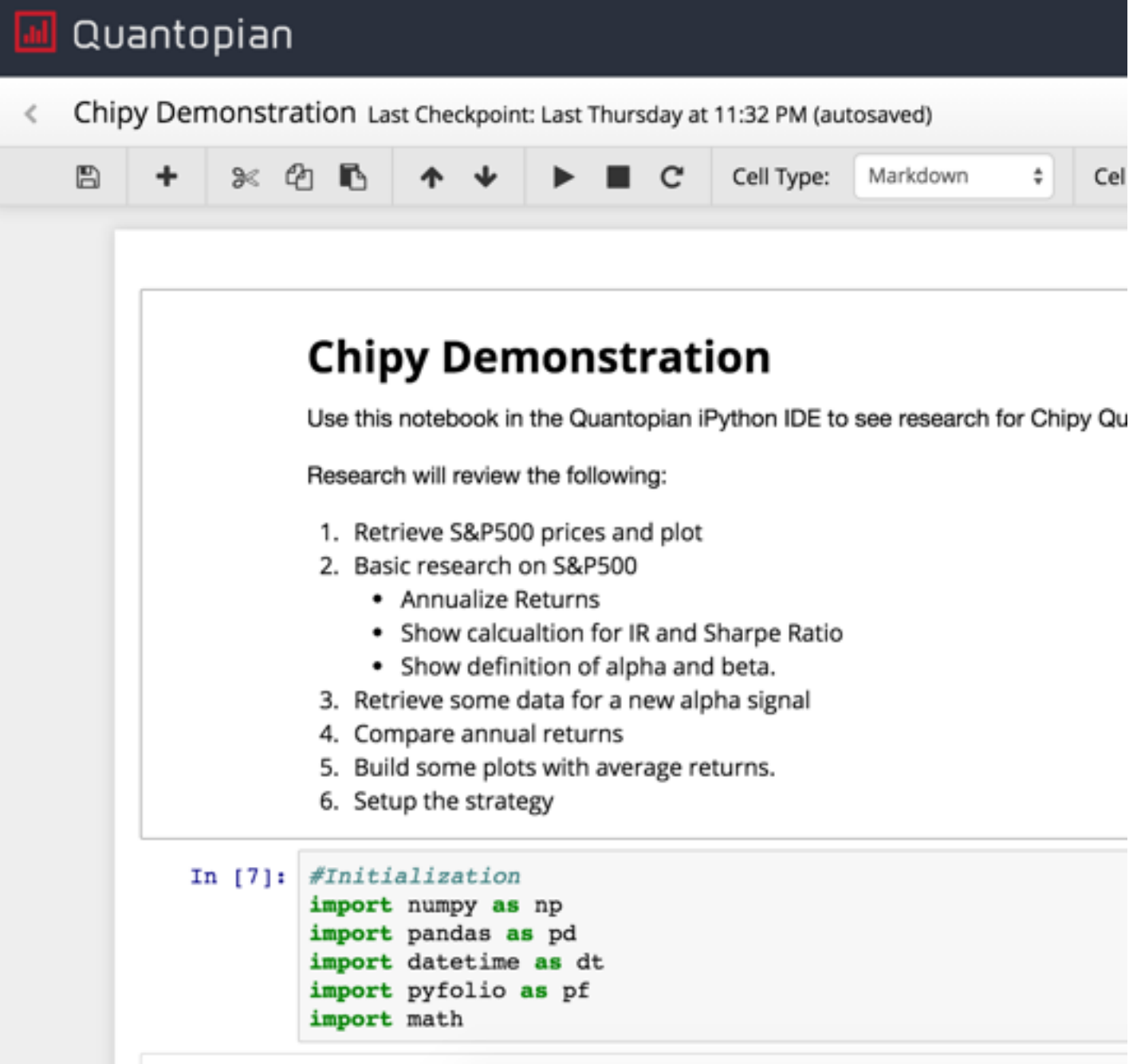


Quantopian

Lets take a tour

Research

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



The screenshot shows the Quantopian web interface. At the top, the header reads "Quantopian". Below it, the notebook title is "Chipy Demonstration" with a subtitle "Last Checkpoint: Last Thursday at 11:32 PM (autosaved)". A toolbar contains icons for saving, adding cells, deleting, copying, pasting, undo, redo, and running cells. The "Cell Type" dropdown is set to "Markdown".

Chipy Demonstration

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

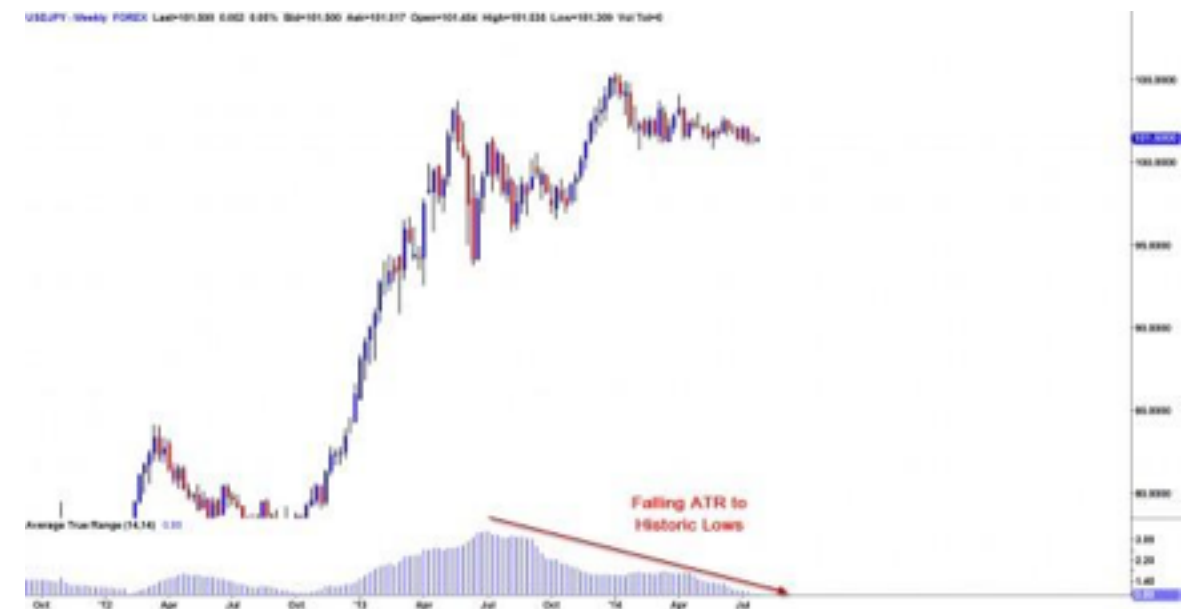
Research will review the following:

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

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

Robust Strategy

- Intuitive connection to market economic thesis
- Diversified: broad market, good spread of out performance in a variety of market conditions
- Reproducible: Backtest, Out of sample testing, live monitoring
- Risk Optimized: Factor Exposures,



Some Closing thoughts

- Use the forums: Quants are typically reserved, but the forums are quite active
- Clone Algorithms
- Fundamental Strategies are somewhat unexplored
- Developing in the IDE has perks, but more formalized research (iteration, optimization) can be better handled outside of the product.
- Backtests aren't "real". There are a lot of other considerations: transaction cost, margins, slippage, tax, etc.

Backtest Challenge



Places to start:

1. Improve the model
2. Alternative trading strategy (Going to cash isn't ideal)
3. Leverage - Leveraged ETF
4. Optimization

Other Resources

- [This Presentation on Github](#)
- [Quantopian Overview: Jess Stauth](#)
- [General Quantopian Resources](#)
- [Strategy Building: Dan Dunn](#)
- [Slack for the Group](#)