Python Quant Platform

Web-based Financial Analytics and
Rapid Financial Engineering with Python

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The **Python Quant Platform** offers
Web-based, scalable, collaborative
financial analytics and
rapid financial engineering for
individuals, teams and companies.

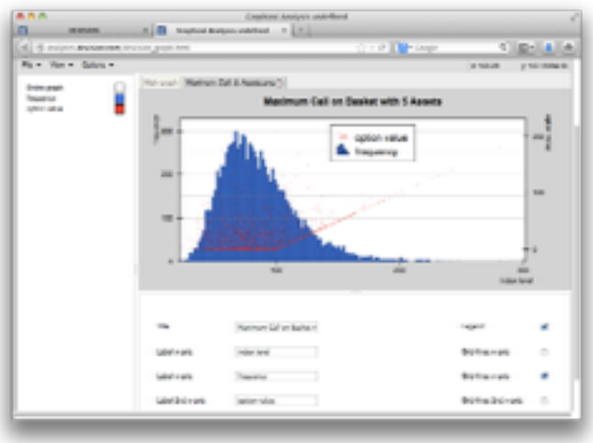
http://quant-platform.com

Python Quant Platform — 1

The Analytical Core Components

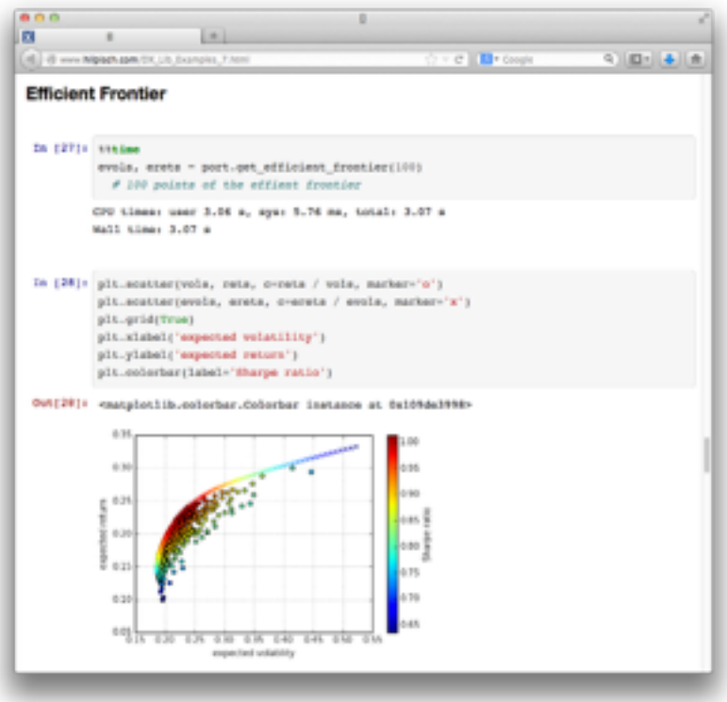
DEXISION

GUI-based
Financial Engineering



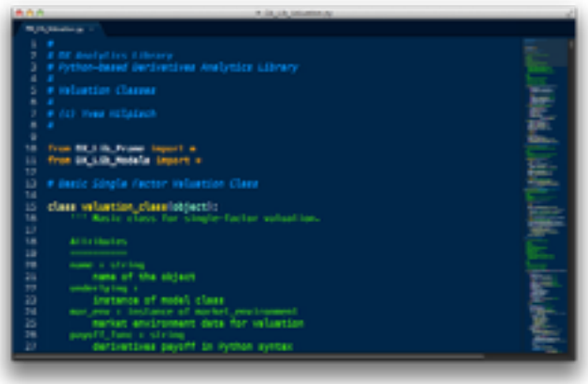
IPython

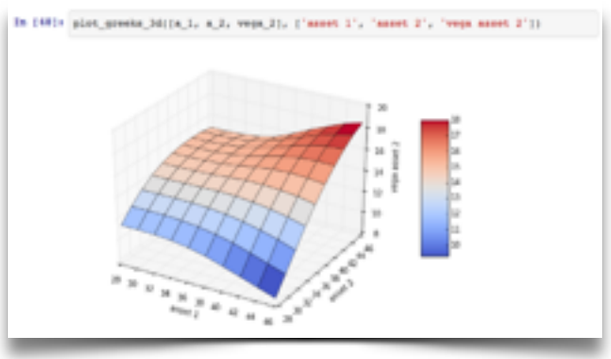
Interactive, Python-based
Financial Analytics



DX Analytics

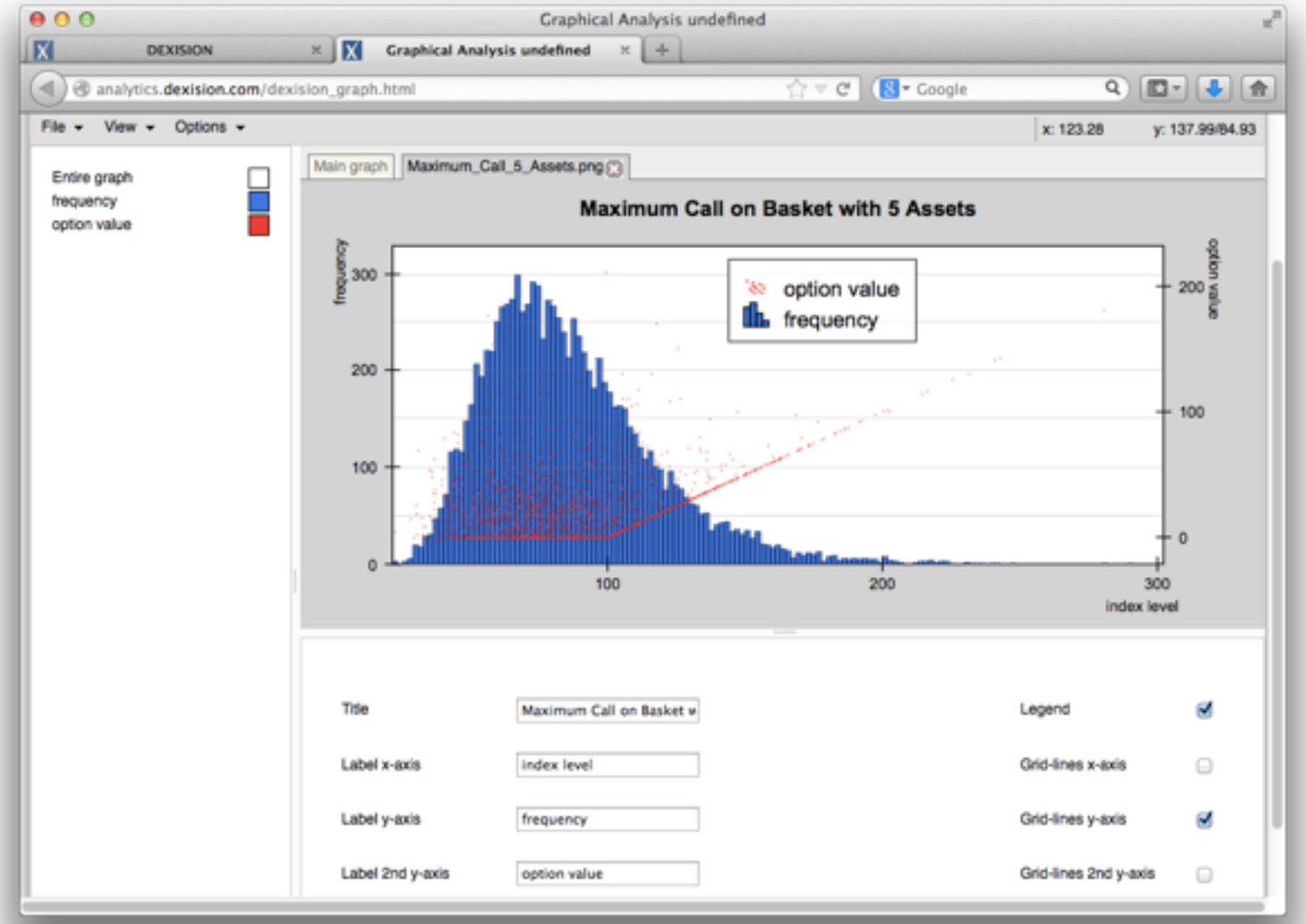
Python-based
Analytics Library





DEXISION

GUI-based rapid financial engineering

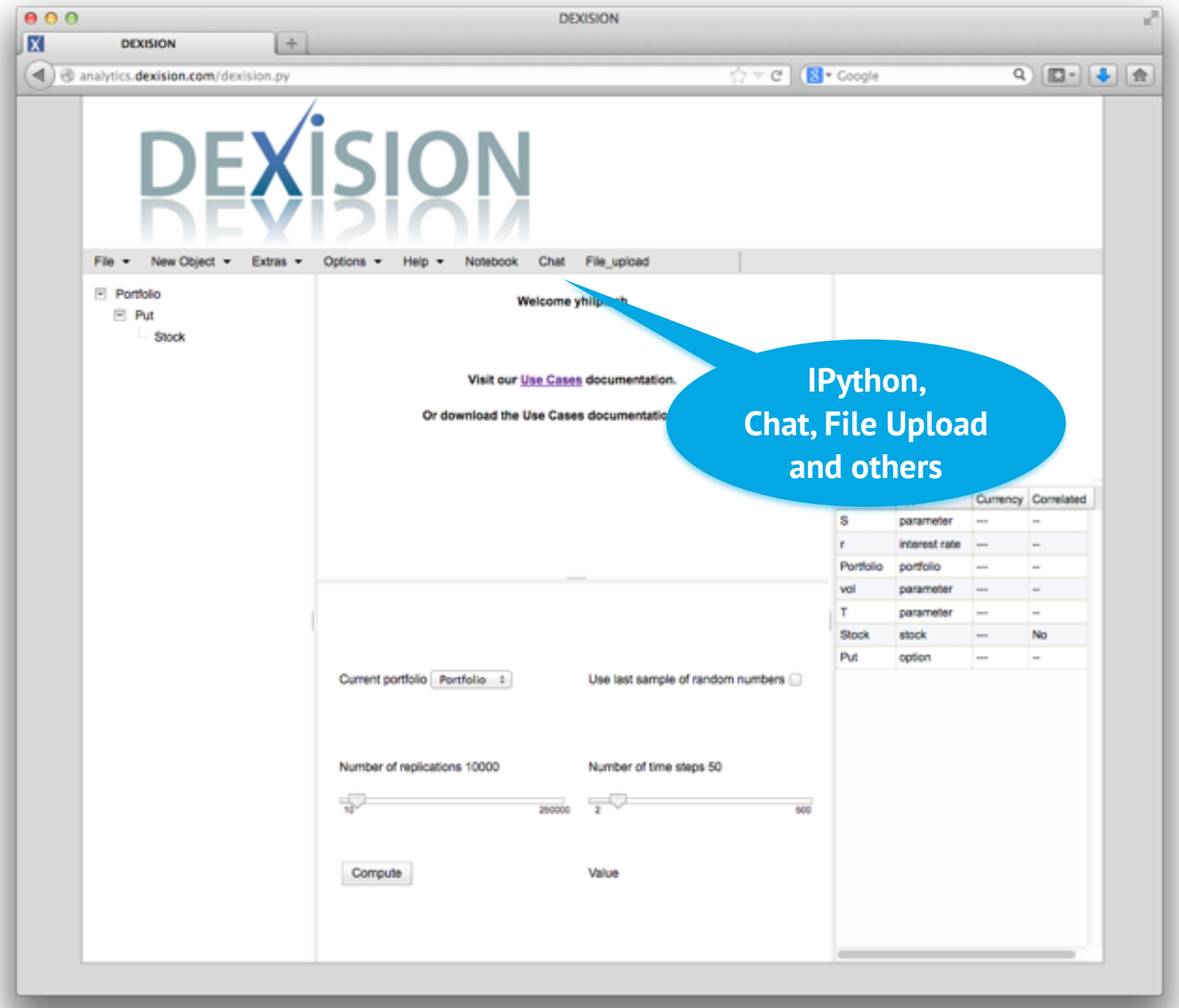


www.hilpisch.com/dexision.mov

www.derivatives-analytics.com

Integrated Technologies

DEXISION is integrated with IPython and other Apps



Integrated Technologies

Getting analytics results in IPython from DEXISION

python_quant_platform

IPy python_quant_platform

notebooks.dexision.com:4002/notebooks/python_quant_platform.ipynb

IP[y]: Notebook python_quant_platform Last Checkpoint: May 03 15:28 (autosaved)

File Edit View Insert Cell Kernel Help

Code Cell Toolbar: None

Getting Results from DEXISION

In [7]:
```
import urllib
from IPython.display import HTML
```

Web service integration

In [8]:
```
# DEXISION Web service URL for example portfolio
url1 = "http://development.dexision.com/DEXISIONeval.py?"
url2 = "user=yhilpisch&company=visixion&pwd=pythonquants"
url3 = "&portfolio=dax_put_call/portfolio"
url4 = "&strike=%s&format=%s"
dx_service = url1 + url2 + url3 + url4
```

In [9]:
```
dx_connect = urllib.urlopen(dx_service % (10000, 'text')).read()
```

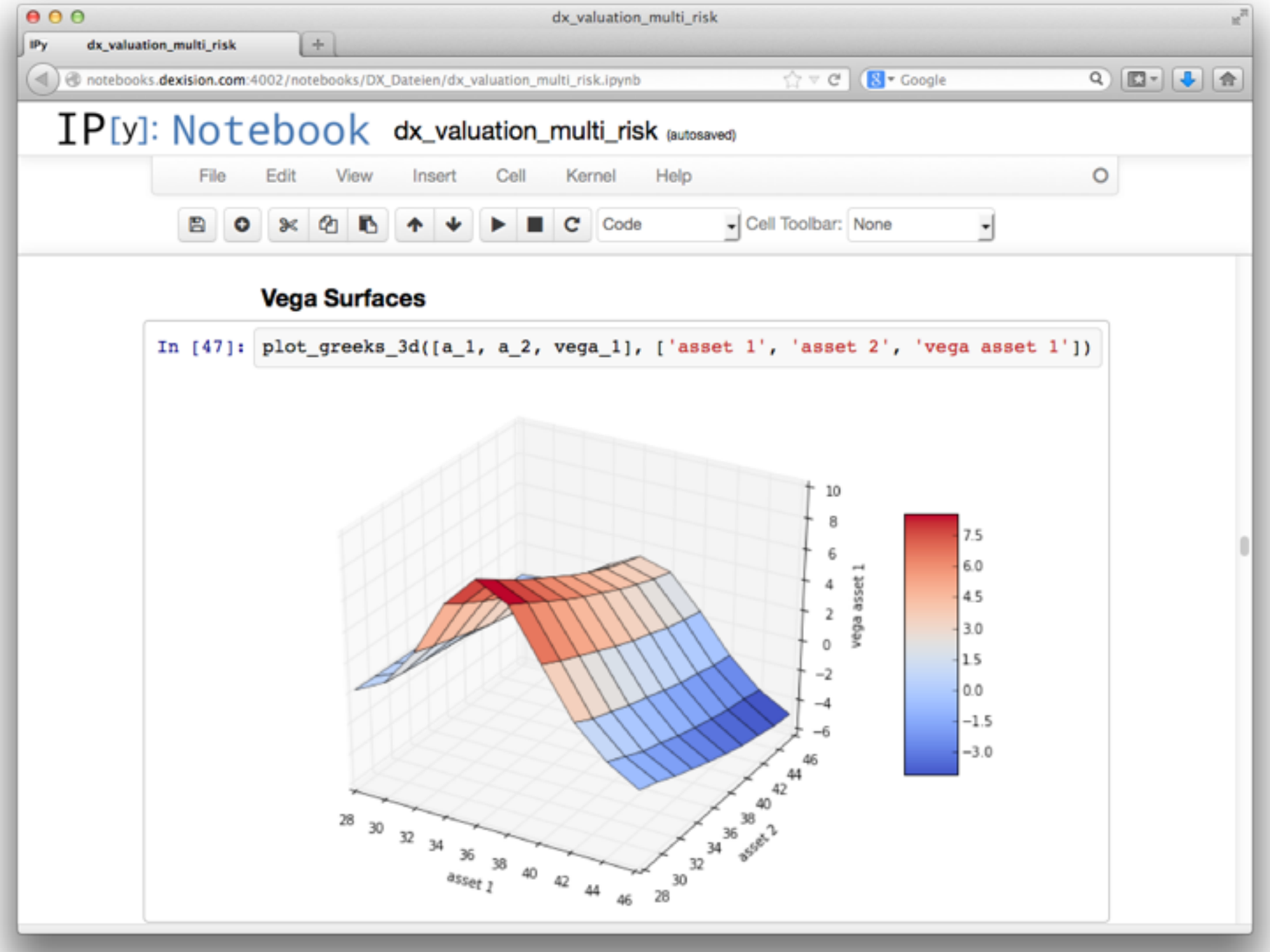
In [10]:
```
HTML(dx_connect)
```

Out[10]:

portfolio	portfolio	714.257171111
option	call_option	143.029727779
stock	dax	9619.02540606
option	put_option	571.227443332
stock	dax	9619.02540606

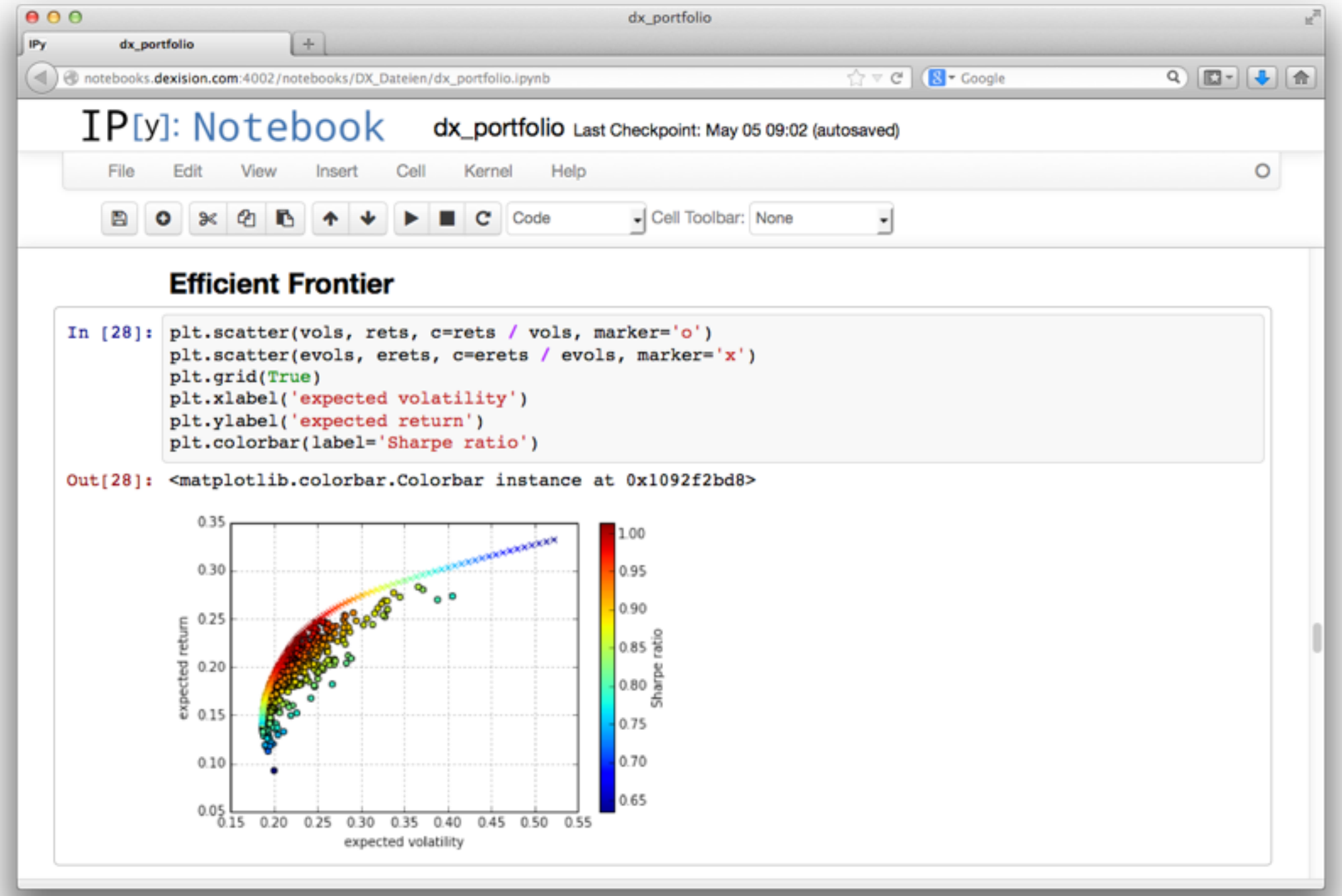
Integrated Technologies

Doing derivatives analytics with DX Analytics



Integrated Technologies

Doing portfolio analytics with DX Analytics



Python Quant Platform — 2

Infrastructure and Applications

Python

Full-Fledged
Python Stack

NumPy, SciPy,
pandas, PyTables
h5py, matplotlib,
IPython, numexpr
Cython LLVM, LLVMpy
Numba, Scikit-learn,
many more

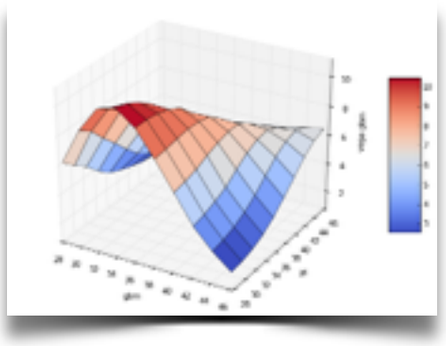
Deployment

Powerful, Dedicated
Server Infrastructure

32 cores
96 GB RAM
6 TB disk

Applications

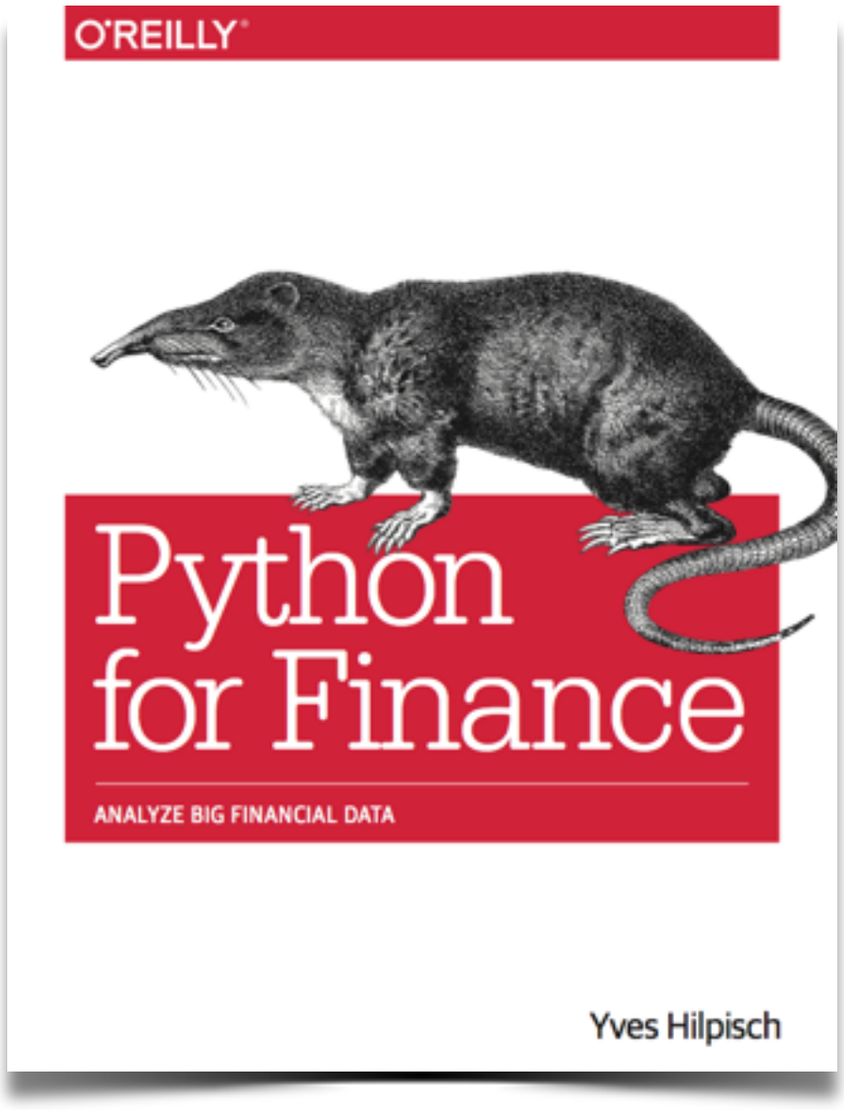
Derivatives, Portfolio,
Trading, Risk, Analysis

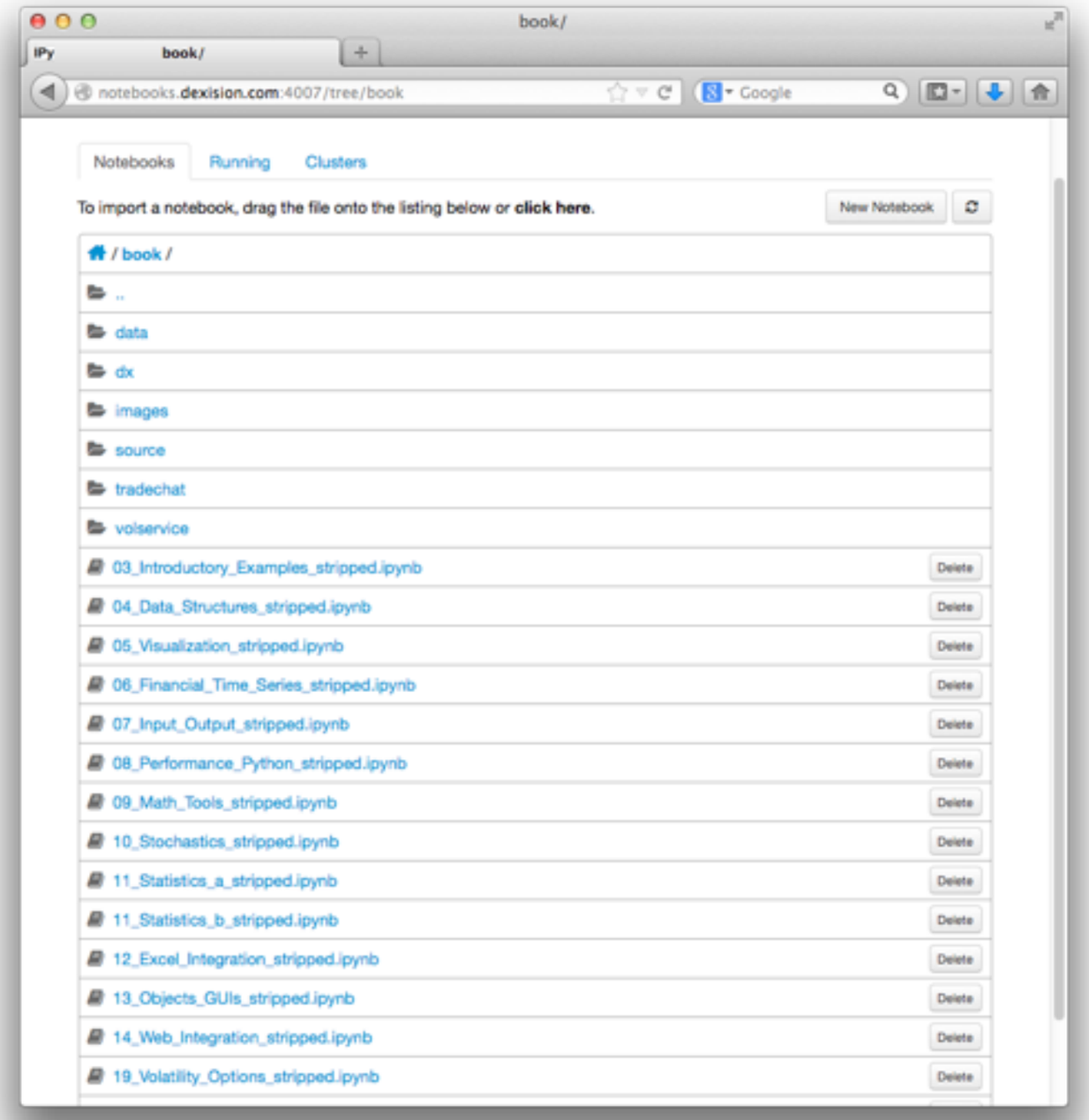


Derivatives Pricing
Portfolio Management
Quantitative & Algo Trading
Strategy Backtesting
Quantitative Research
Company Valuation
Value-at-Risk
Credit Value Adjustments
Time Series Analysis
Bayesian Statistics
Reporting

Python for Finance

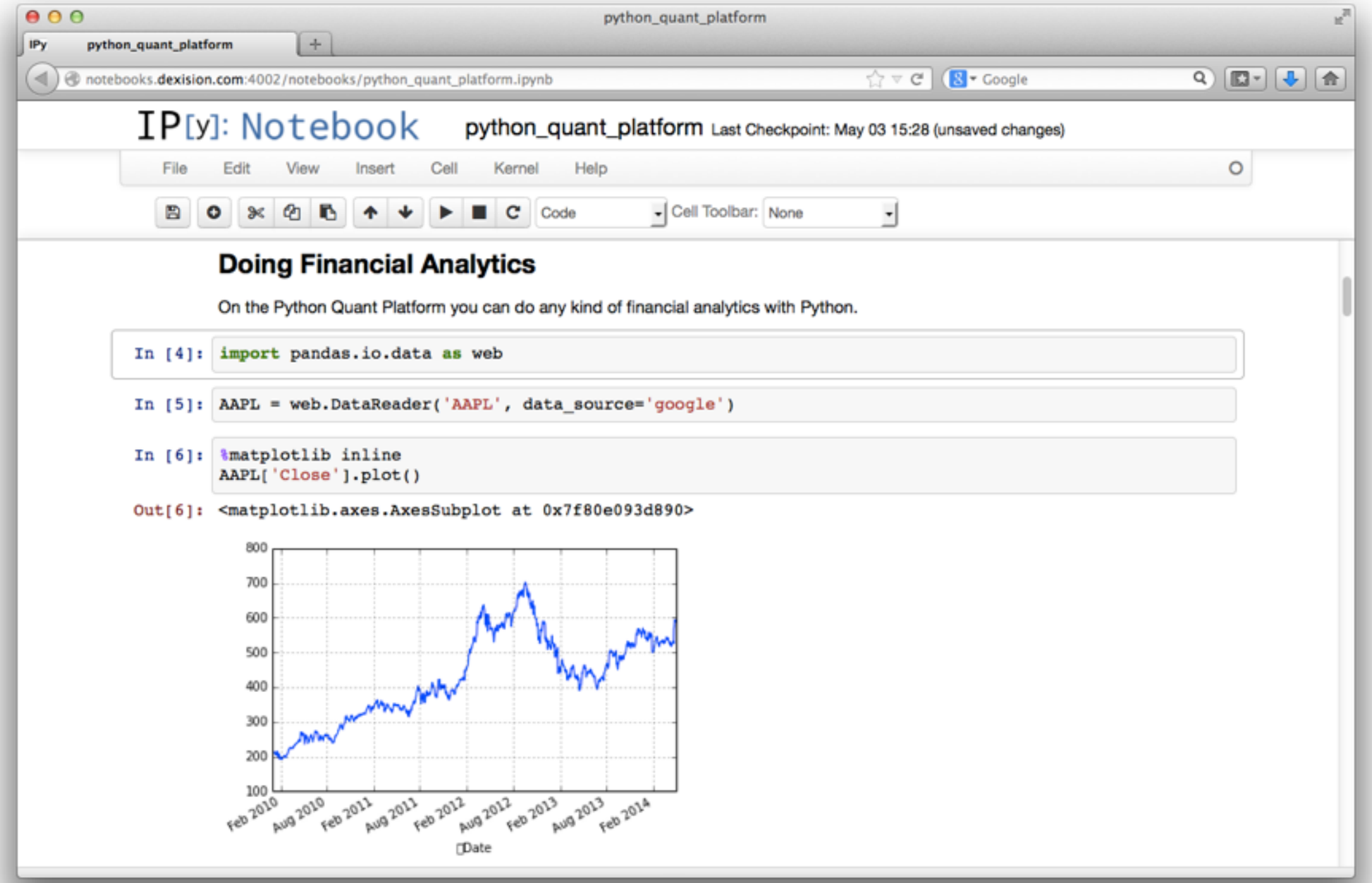
Book and IPython Notebooks for training, teaching





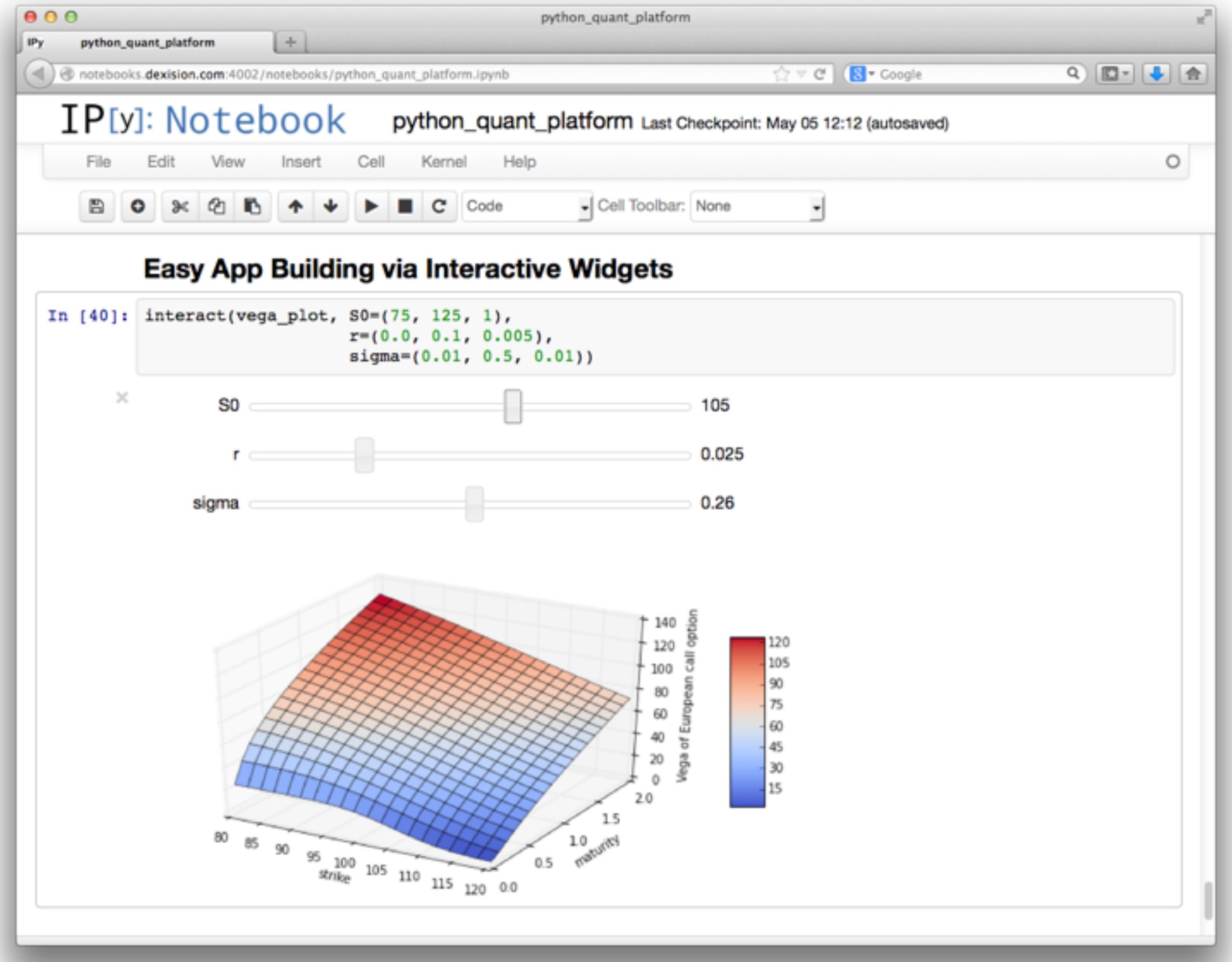
Instant Deployment

Financial analytics with Python in the browser



Easy Application Building

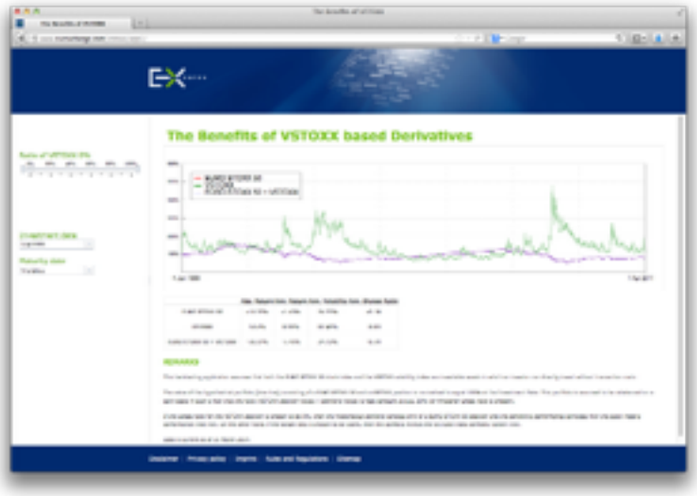
Python & Web apps via interactive IPython widgets



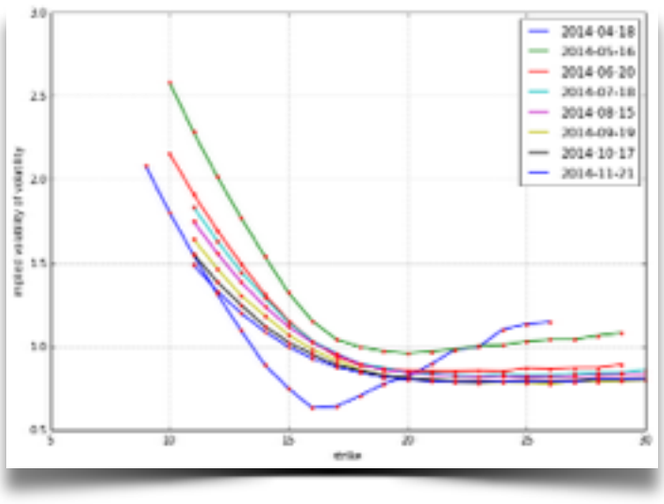
Automated Analytics Workflows

Example Workflow – VSTOXX Volatility Options

VSTOXX Index, Futures, Options



Volatility Surface of VSTOXX Options



IPython

Data Management for
VSTOXX index, futures & options
– implied volatilities

DX Analytics

Modeling and simulation of
VSTOXX index

DX Analytics

Modeling of traded
VSTOXX options

DX Analytics + IPython

Calibration of VSTOXX model
to option quotes

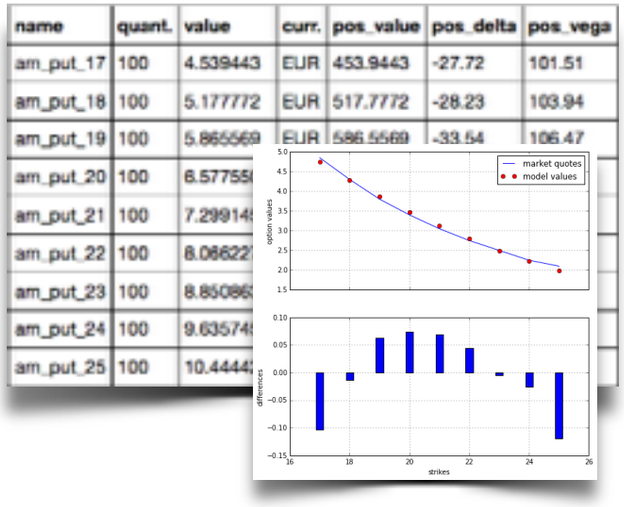
DX Analytics + IPython

Modeling and valuation of
OTC contracts on the VSTOXX
– incl. portfolio statistics and Greeks

DataNitro

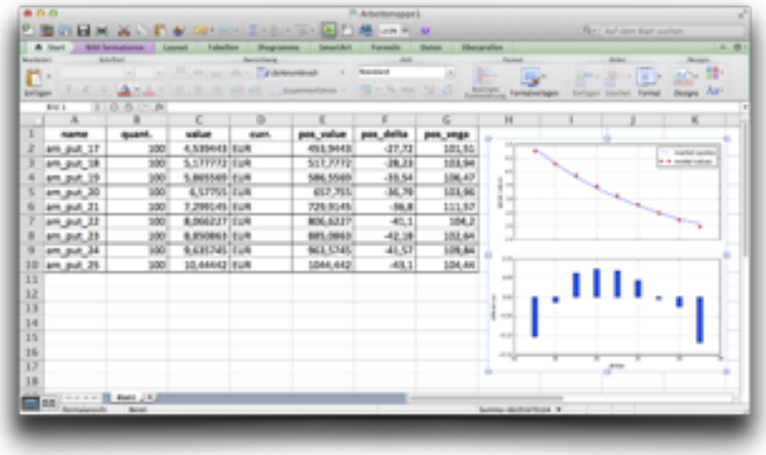
Integration of functionality, results
and plots in Excel spreadsheets

OTC Derivatives Portfolio with Greeks



name	quant.	value	curr.	pos_value	pos_delta	pos_vega
am_put_17	100	4.539443	EUR	453.9443	-27.72	101.51
am_put_18	100	5.177772	EUR	517.7772	-28.23	103.94
am_put_19	100	5.865569	EUR	586.5569	-33.54	106.47
am_put_20	100	6.57755				
am_put_21	100	7.29914				
am_put_22	100	8.08622				
am_put_23	100	8.85086				
am_put_24	100	9.63574				
am_put_25	100	10.4444				

Excel Spreadsheet Integration

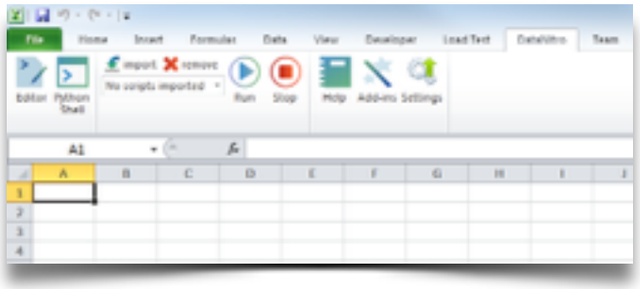


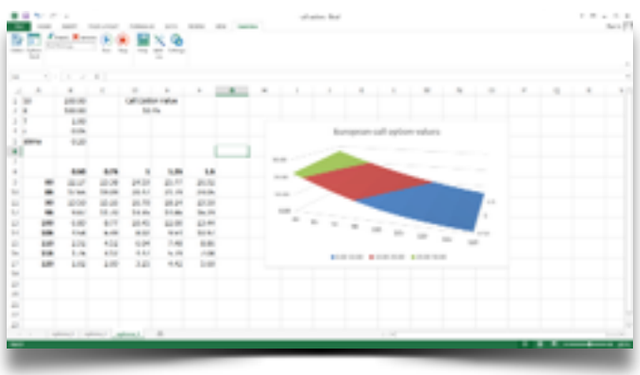
Python Quant Platform — 3

Excel & Data Integration + Collaboration

Excel

Integration via DEXISION,
pandas & xlwings/DataNitro



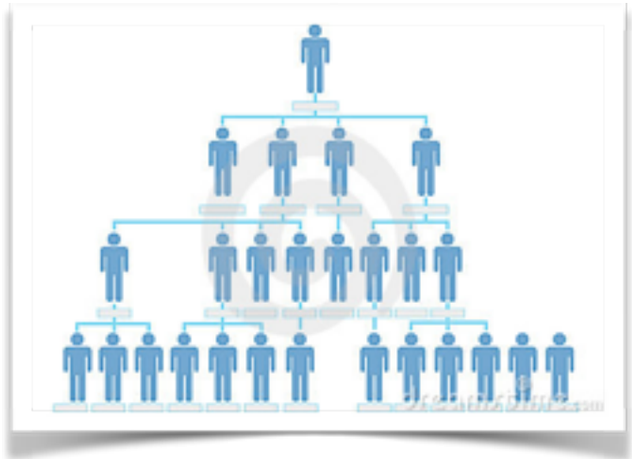


Data

Example: Eikon
Thomson Reuters

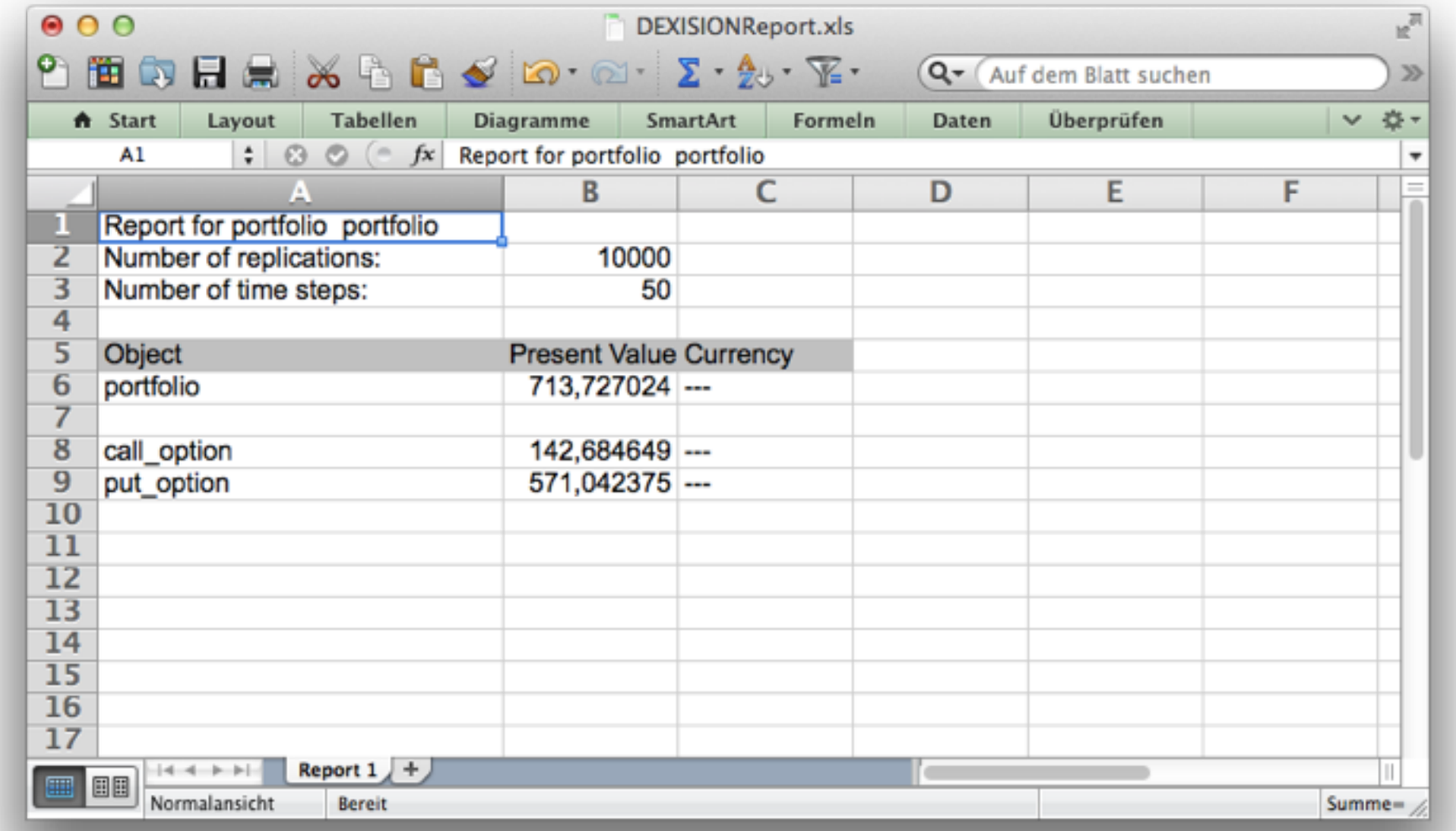
Collaboration

Management of Teams,
Rights and Roles



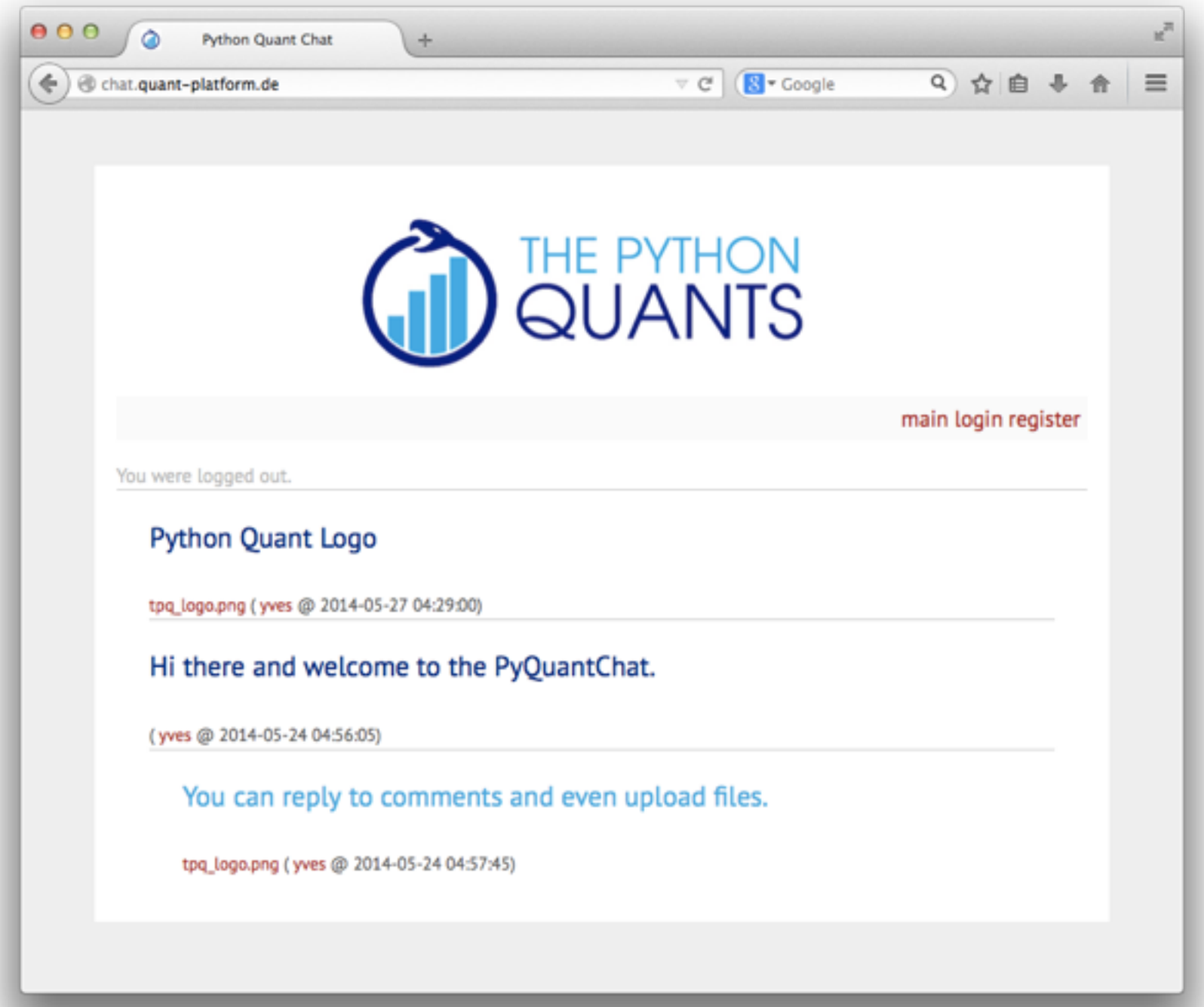
Excel Integration

Export results directly to Excel or use xlwings/DataNitro



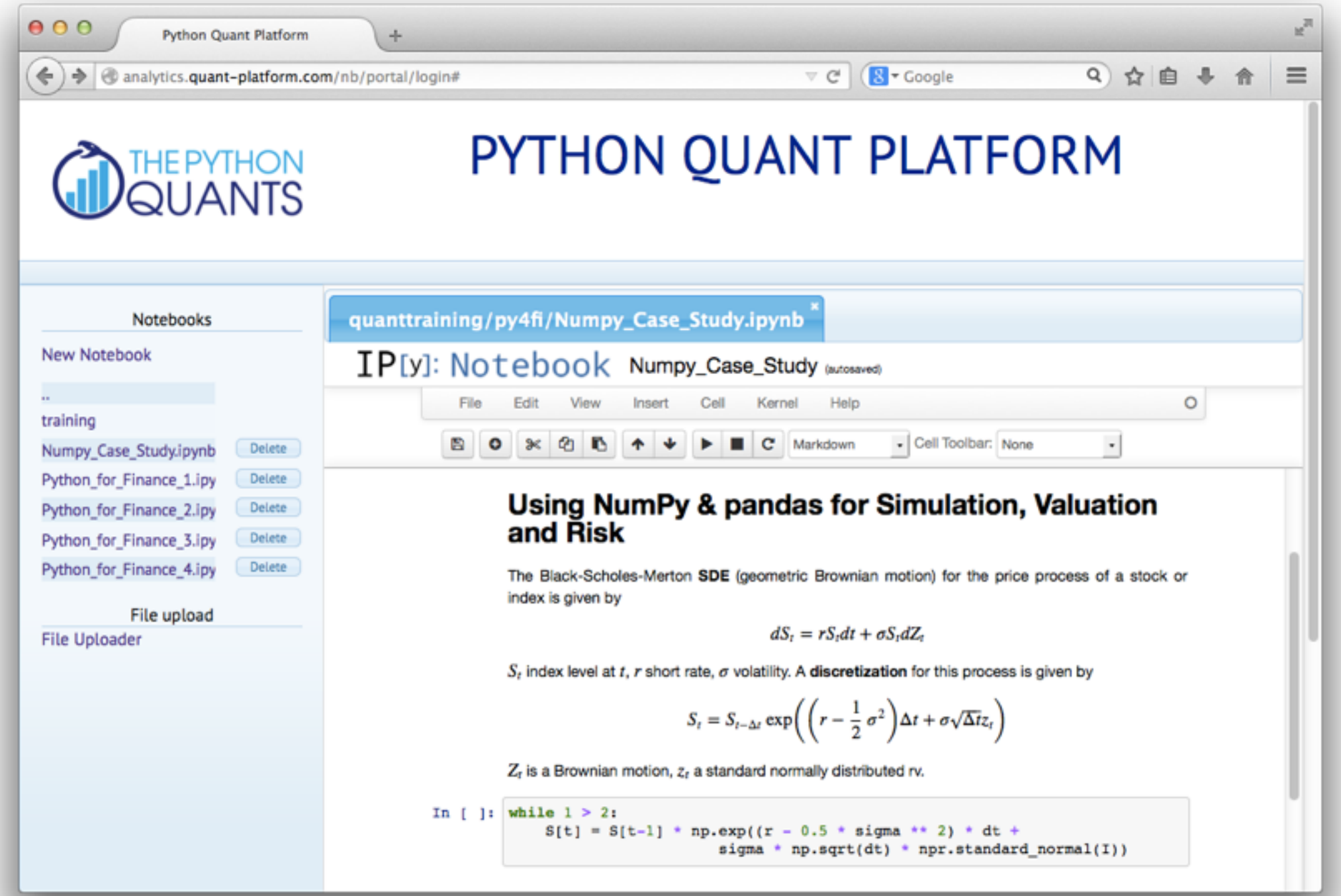
Collaboration

Python Quant Chat to communicate and exchange ideas



Collaboration

Notebook collaboration & sharing based on users and groups



Python Quant Platform

Being better and faster
in financial analytics and engineering.

Interactively prototype, collaborate on and share
Python-based analytics workflows and applications
across your organization.

The Python Quants Group

Currently active in Germany, New York and London

The Python Quants GmbH
(Germany)

The Python Quants LLC
(New York)

The Python Quants
(London)

The Python Quants Group has an international team of Python and Finance experts that helps clients to get the most out of Python technology in Quantitative Finance.

The team members have helped banks, hedge funds, asset managers and other financial institutions around the globe with Python-based technologies, projects and trainings. Areas of expertise include interactive financial analytics, derivatives analytics, financial algorithm implementation, risk management, strategy backtesting, Python-Excel integration and unified analytics infrastructures.

The Python Quants GmbH

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