The most powerful open source data science technologies in your browser.

Yves Hilpisch

I. **The Market and The Problem**

II. How We Solve The Problem

III. Market Size and Facts

IV. Strategic Opportunities

Mega Trends

Mega trends that influence data science

Today's standard is "open source", even for key technologies.

More and more data sets are "open and free".

Complex analytics work flows are coded in the browser.

Dynamic communities shape the way knowledge is transmitted

Individuals and institutions store more and more data in the cloud.

Infrastructure is a standardized commodity, billed by the hour.

Open Source Software Revolution

OSS revolutionizes data science both in the front & back end

FRONT END

In the front end, OSS revolutionizes how data scientists and developers work on a daily basis.

BACK END

In the back end, OSS revolutionizes how analytics workflows and data applications are deployed and scaled.

Open Data Science Conference

IPython
Interactive Computing

jupyter

PyData

openstack
CLOUD SOFTWARE

Spark

CLOUD FOUNDRY

BEAKER
THE DATA SCIENTIST'S LABORATORY

"DigitalOcean is a simple and fast cloud hosting provider built for developers. Customers can create a cloud server in 55 seconds, and pricing plans start at only $5 per month for 512MB of RAM, 20GB SSD, 1 CPU, and 1TB Transfer."

The Problem

Obstacles to using OSS for data science

Open Source
fast changing environment

Vendors & Partners
almost no vendors that provide help & support

Libraries
huge amount of libraries to manage

Tools
multitude of useful standalone tools

Deployment
complex, lengthy, costly, risky

Maintenance
how to update, maintain infrastructure?

Diverse End Users
computer & data scientists as well as domain experts

Training
how to train and re-train people?

Start
where and how to start, who to talk to?

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datapark
data science in the browser

datapark.io

Open source data science technologies in your browser

Tools and technologies data scientists know and love.

Browser-based Data Science

datapark capitalizes on new Web technologies and tools

1. **Generation: Move Data Around** — data analytics started by moving data from one place to another, analyzing it locally and moving results back to the remote data source
2. **Generation: Move Code Around** — moving tons of data is costly and time consuming; moving small code sets is faster and less costly
3. **Generation: Don't Move Anything** — the Browser and Web technologies allow to work directly and in real-time on the infrastructure where data and code are stored (replacing e.g. remote ssh access)

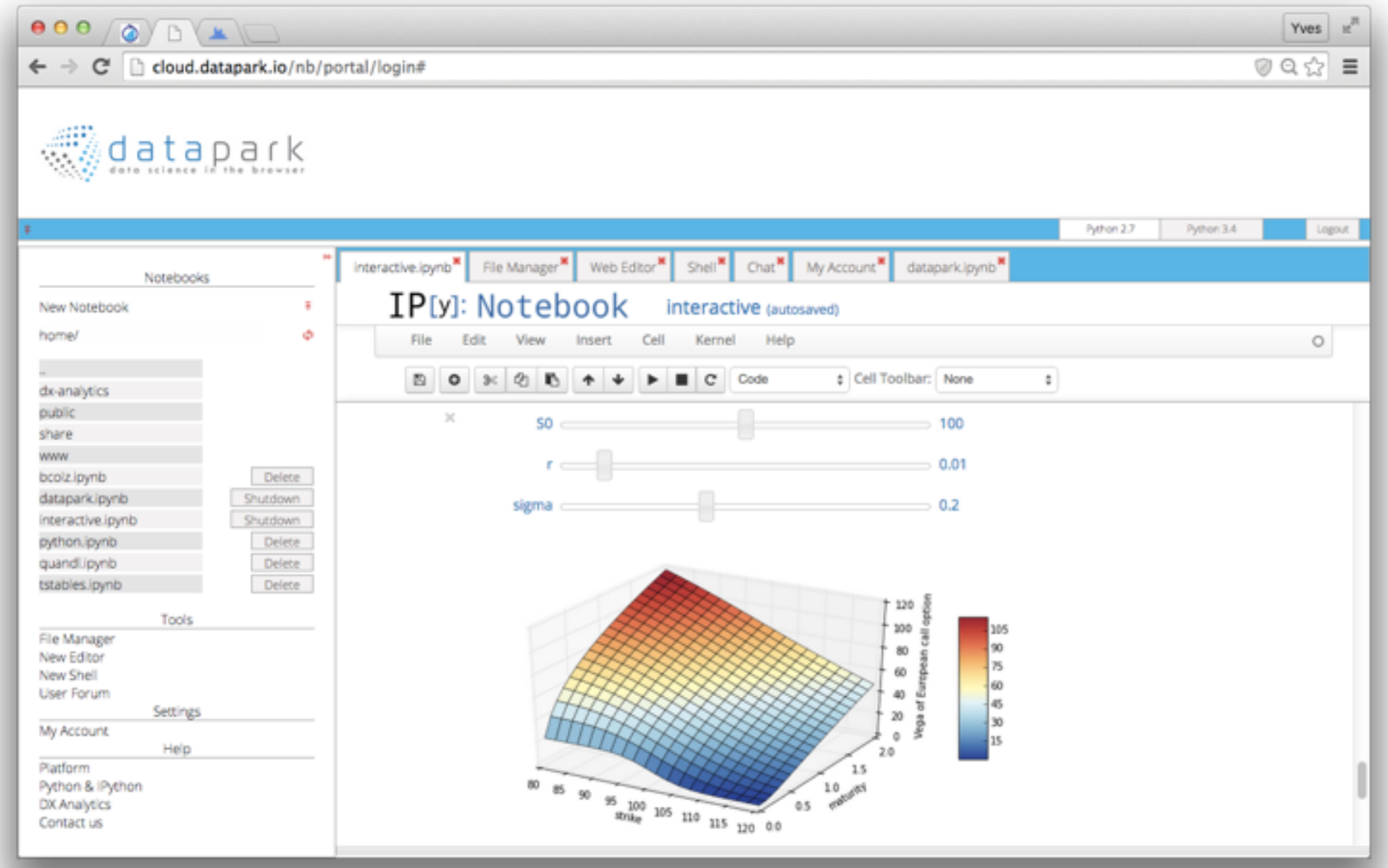
Feature Rich

datapark is essentially a data scientist's wish list

Browser	you only need your browser to use the full fledged Data Science environment
Analyze	interactive notebooks for explorative data analytics with e.g. Python, R, Julia
Visualize	easily visualize your data – both statically and interactively (D3.js)
Edit & Develop	edit all typical code files within the browser (e.g. Python, HTML, CSS)
Your Data	easily upload, download and work with your data, files, etc.
Integrate	integrate with your code and data sources, like Github, Google Drive or Dropbox
Collaborate	define projects, collaborate within your team and with others on datapark.io
Share & Publish	share & publish your documents & files, deploy your Web applications
Get Social	let others know what you have been working on

The Platform

Bringing the best of Open Source together in the browser

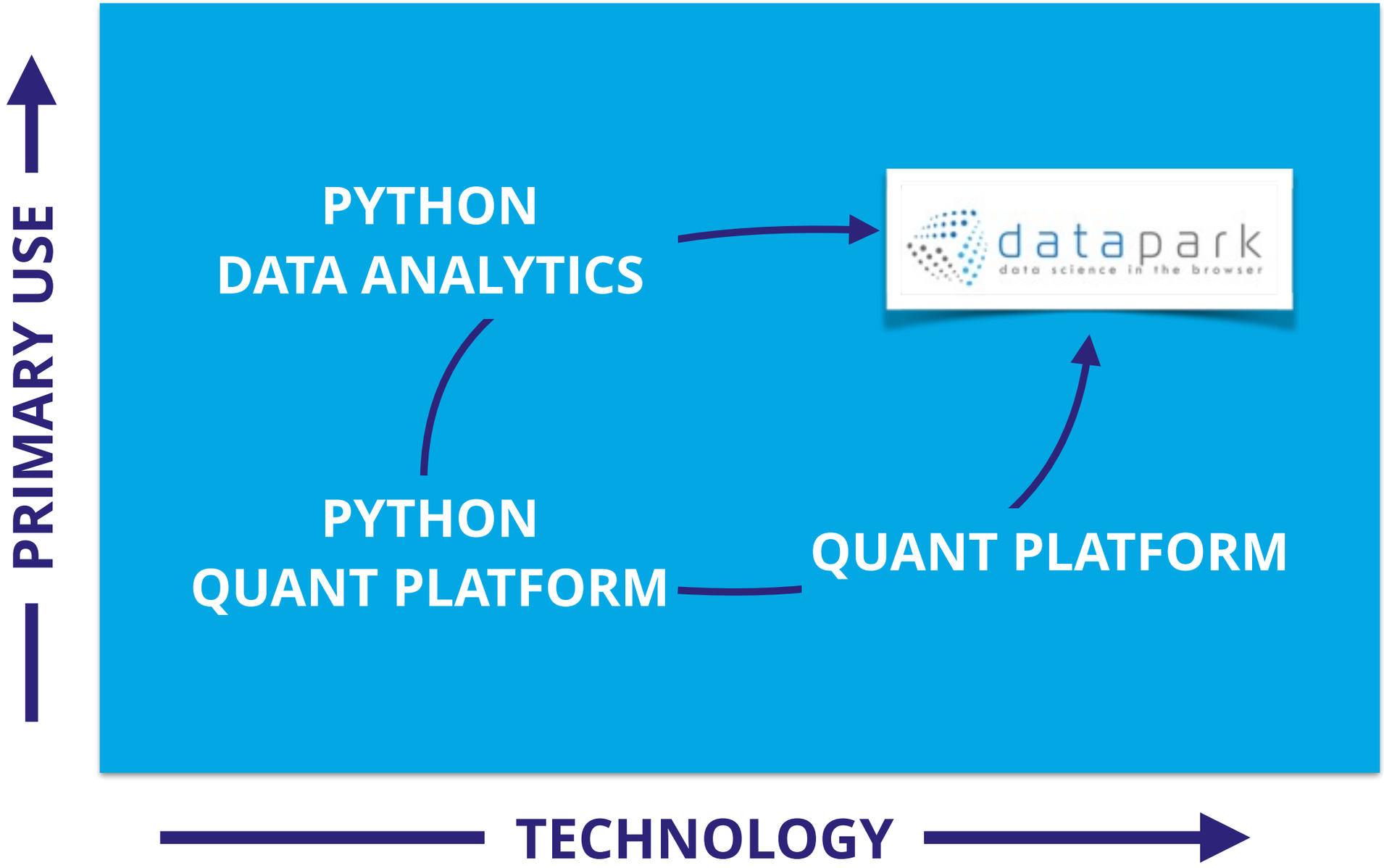


“Absorb what is useful, discard what is not, and add what is uniquely your own.”

—Bruce Lee

Natural Evolution

From Python for Finance to Open Source for Data Analytics



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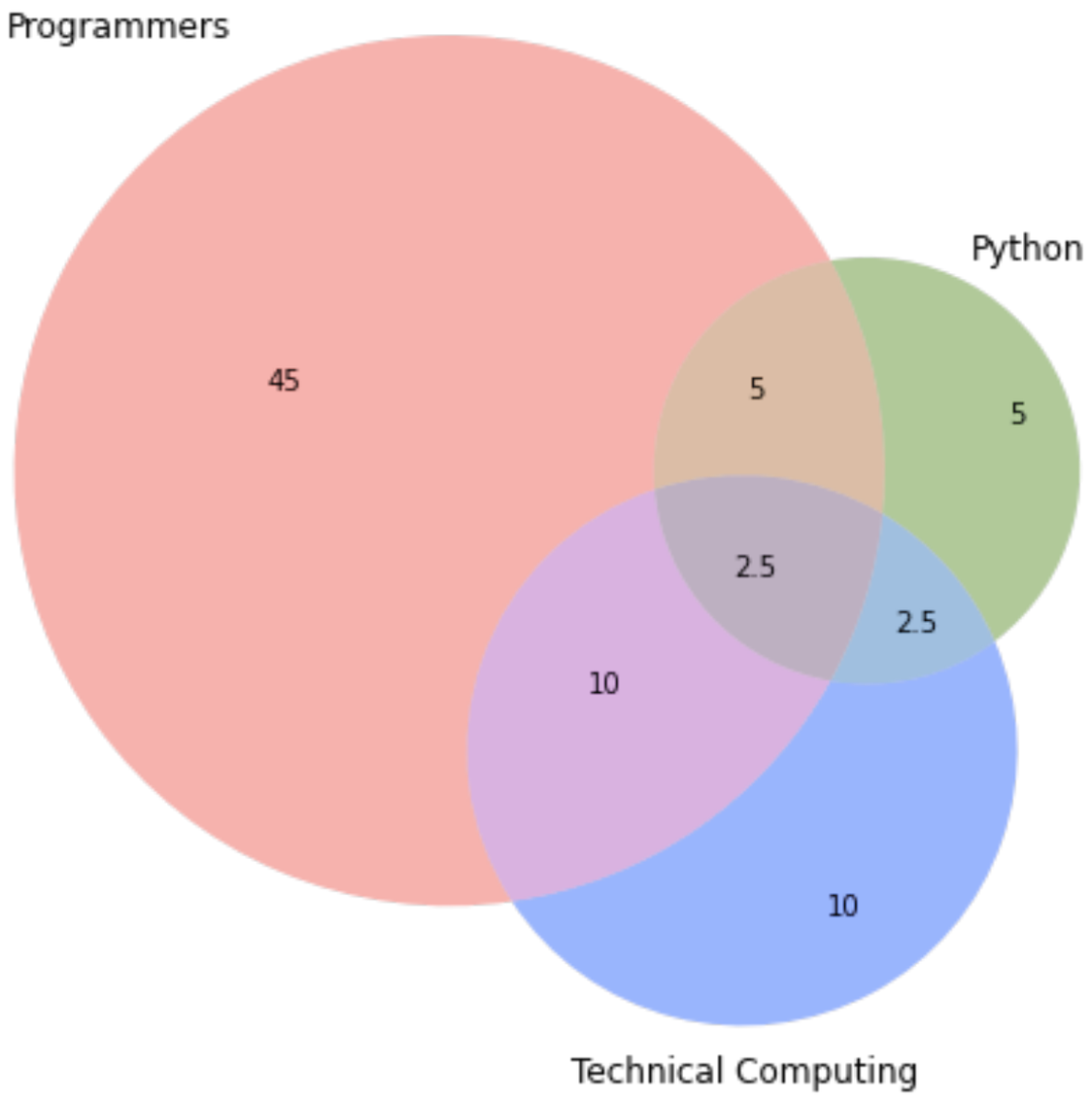
Data Scientists and Engineers

There are about 10mn people in technical computing



Source: diverse Web resources; in mn people

Data Analytics

Data analytics is a top priority of almost any organisation

"Companies will spend an average of $7.4M on data-related initiatives over the next twelve months , with enterprises investing $13.8M, and small & medium businesses (SMBs) investing $1.6M.

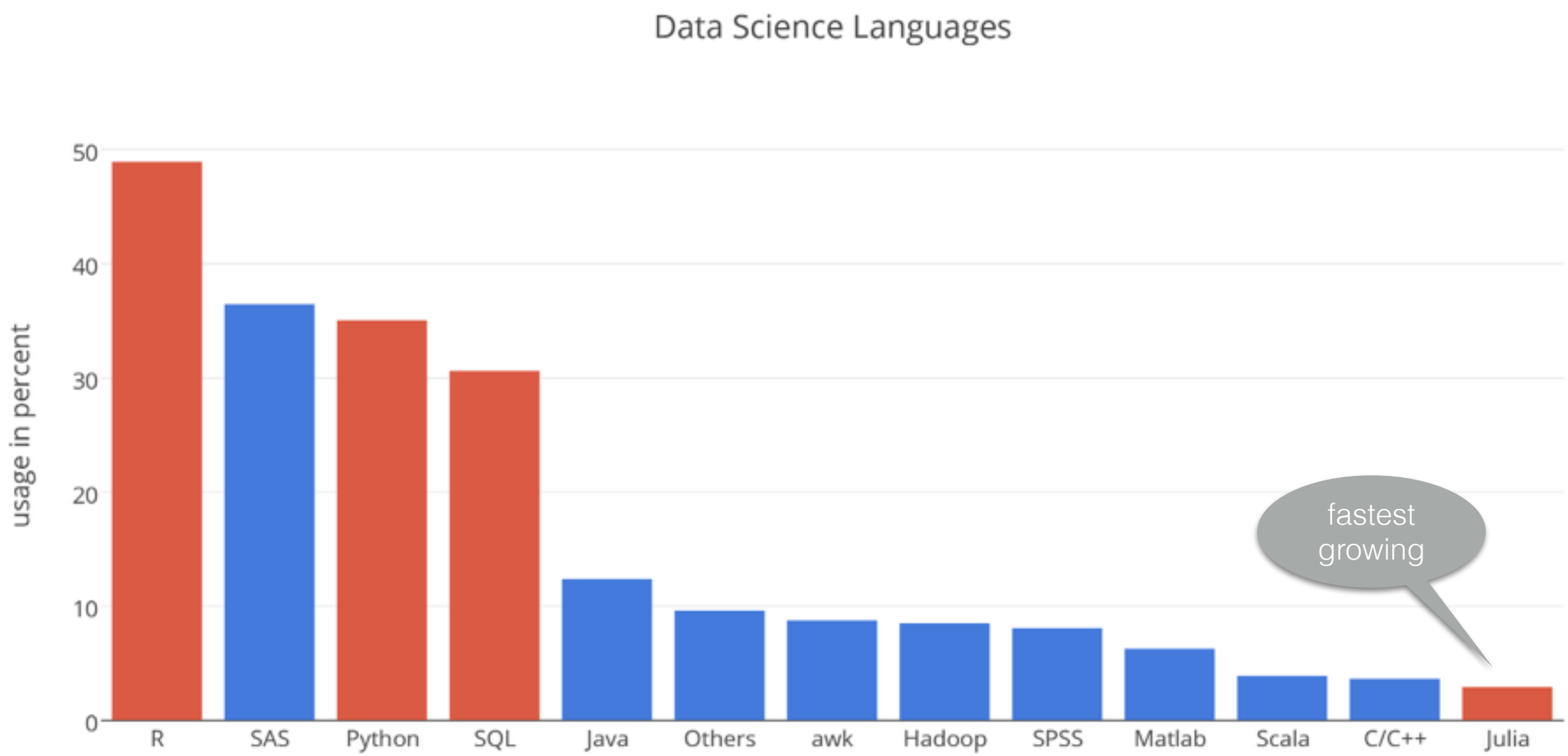
80% of enterprises and 63% of small & medium businesses (SMBs) already have deployed or are planning to deploy big data projects in the next twelve months.

83% of organizations are prioritizing structured data initiatives as critical or high priority in 2015, and 36% planning to increase their budgets for data-driven initiatives in 2015."

Source: http://www.forbes.com

Open Source Data Science

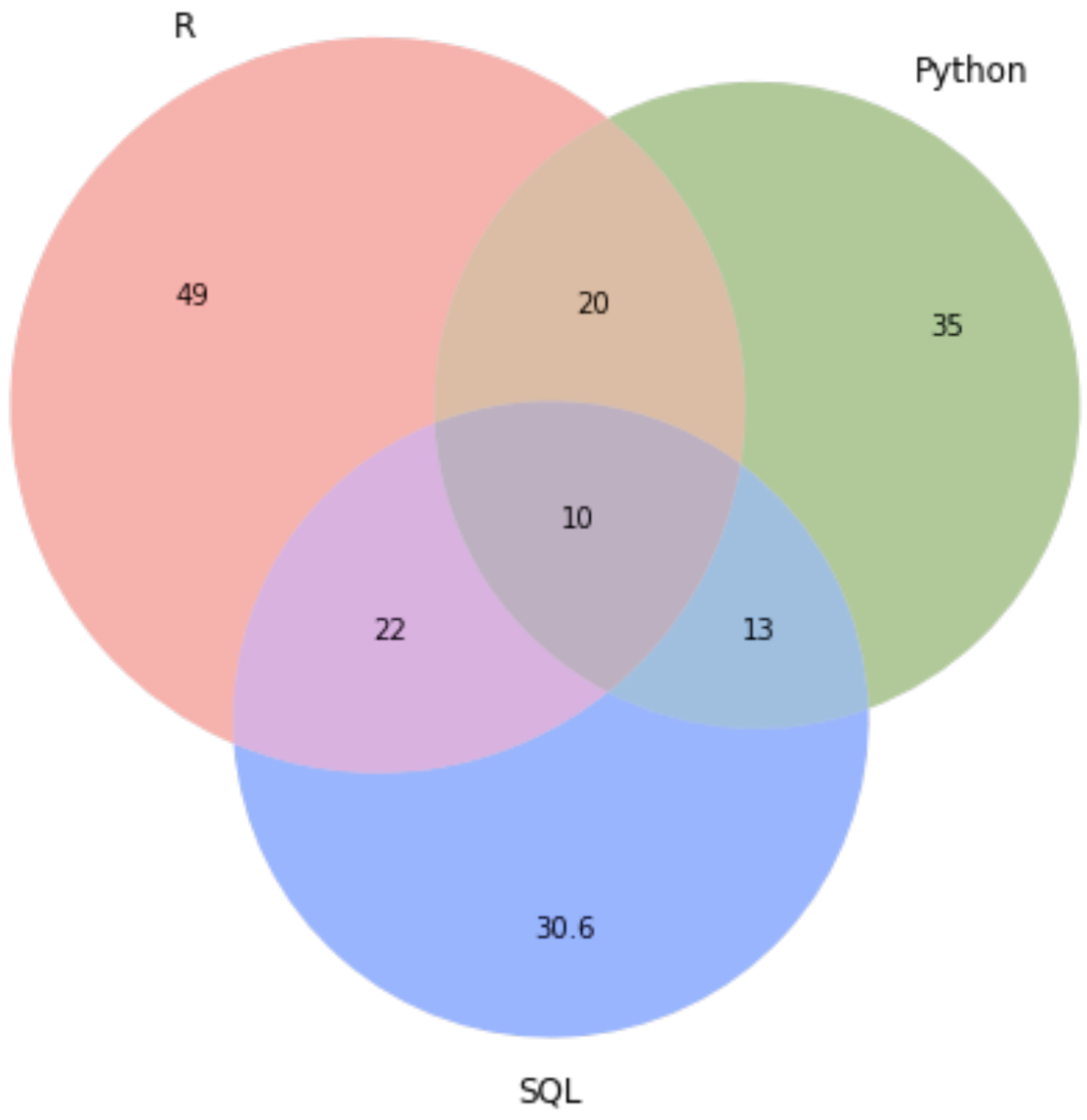
OS languages dominate data science these days



Poll data from August 2014. Source: http://www.kdnuggets.com

Open Source Data Science

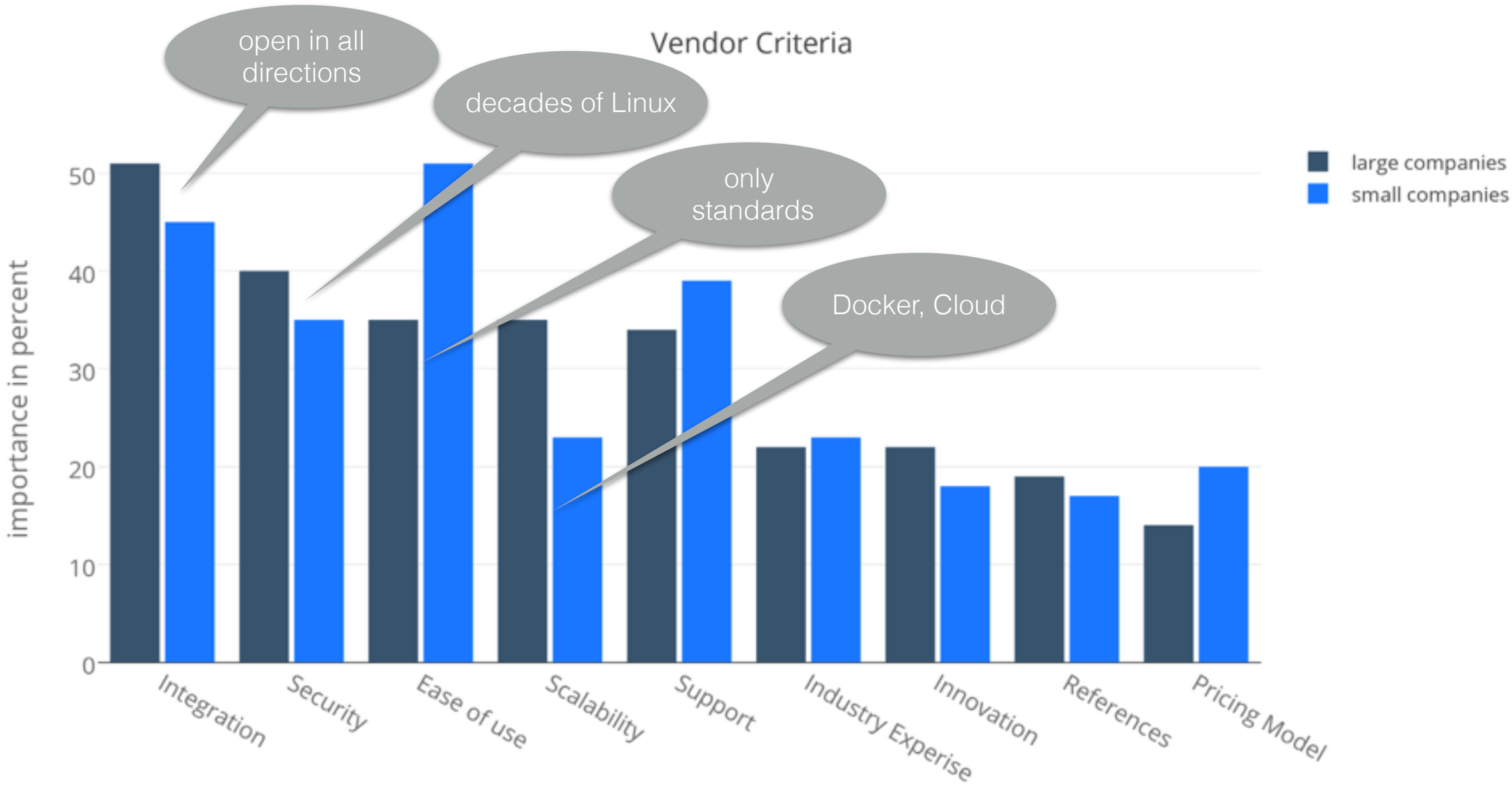
R, Python and SQL dominate OS data science



Poll data from August 2014; usage in %. Source: http://www.kdnuggets.com

Vendor Criteria in Data Analytics

Integration, security, ease of use & scalability important



Source: 2015 Big Data Analytics Survey (Summary Slides)

Platform Competitors ...

... trying to solve the platform problem for data scientists

sense
AGILE DATA SCIENCE

Proprietary Notebook solution, closed platform.
sense.io

MODE

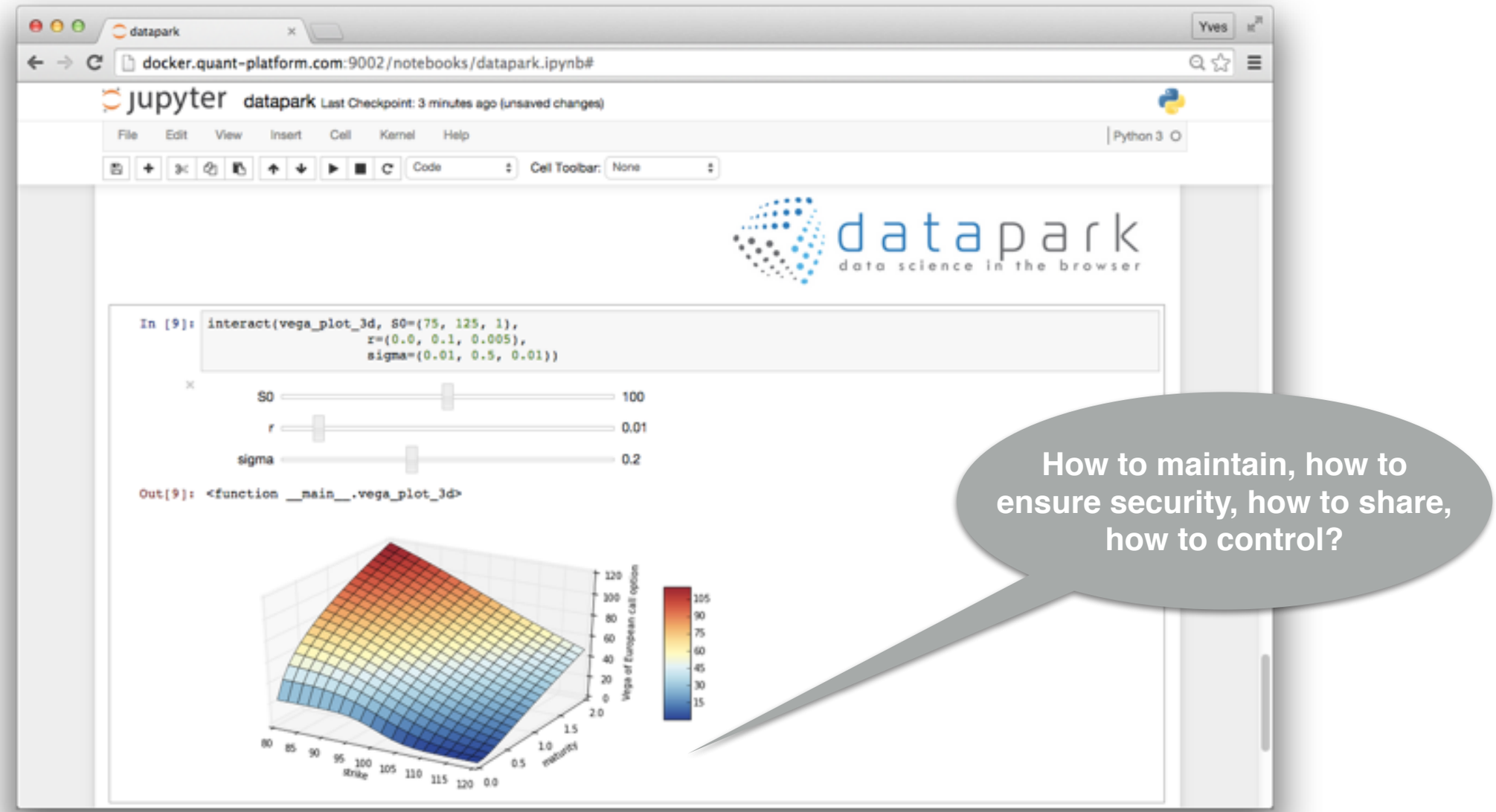
SQL focus, closed platform.
modeanalytics.com

Wakari.io

Python focus, cloud version not maintained.
wakari.io

Major Competitor

The major competitor is Jupyter deployed in the cloud



DigitalOcean droplet for 5 USD p.m., Jupyter with Python 3.4, deployed via Docker for 20+ users

The MVP: http://jupyter.quant-platform.com

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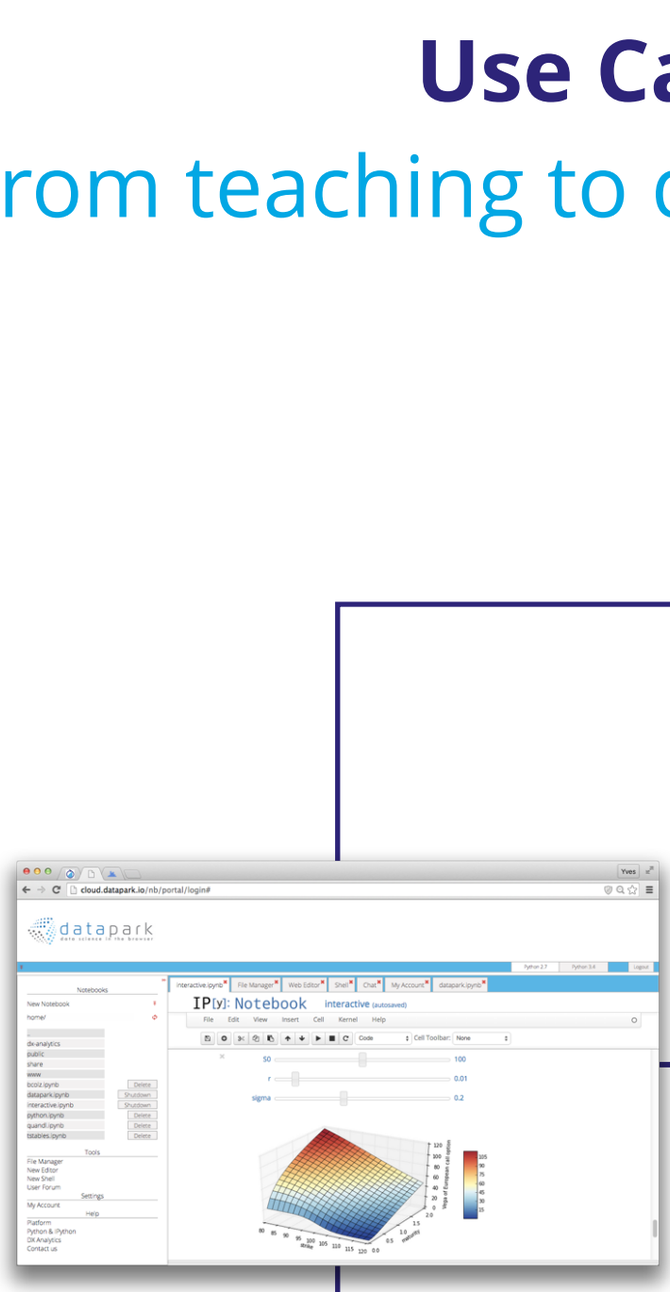
Use Cases for datapark.io

From teaching to data science to a social app store



Teaching Programming & Data Science

Data Science Platform in Institutions and Corporations

Analytics-as-a-Service for Open Source Projects and Proprietary Data and Code

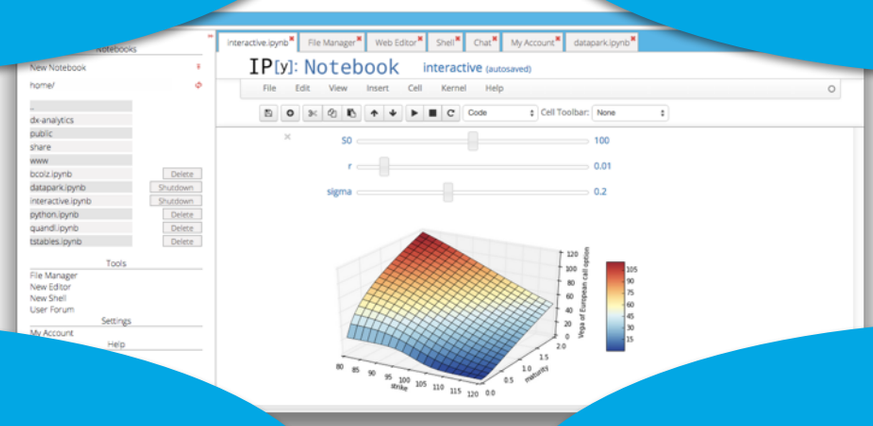
Market Place for Ideas, Projects, Apps etc. (“Social Data Science”)

Establishing a Standard

Building critical mass & social components, improve scalability

Goal of 100,000 users to learn from

Building out Social Components



Improving Deployment and Scalability

Becoming the Github for Data Science

How do we want to reach our goals

Making usage as simple as possible based on standards

Sign-up

Two fields only — 30 seconds, immediate full fledged functionality

Infrastructure

Well established components — Ubuntu, Anaconda, Docker, ...

Tools

All that you know & love — IPython Notebook, ACE, Shell (Git, Vim), ...

Open

Using standards only — IPYNBs, Linux FS, Dropbox, Drive (easy in/out)

Just try it.

http://datapark.io

Give us feedback.

team@datapark.io

datapark

data science in the browser

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The Python Quants GmbH