

프로젝트 개요 및 목표

- 수학이 산업분야에서 응용되는 예를 알아보고 간단한 모델 문제를 해결해 봅니다
- 금융 및 데이터 과학과 관련한 응용의 사례를 중심으로 진행합니다
- 최근 급격하게 발전한 머신러닝 및 데이터 관련 과학 분야 및 IT 개발 방법을 소개합니다
- Python 등 머신러닝 관련 최근 각광 받고 있는 여러 툴 및 웹을 통하여 협업하고 결과를 서비스하는 Git, Django 등 IT 개발 방법과 관련한 내용을 직접 다뤄봅니다

기대효과

- 기본적인 금융공학 이론 및 금융데이터에 대한 이해
 - Python, Django 및 API 이용 등 웹 데이터 활용 및 분석 방법 이해
-

우리의 첫번째 프로젝트

- 금융관련 주가 데이터 등 데이터를 분석하고 Black-Scholes의 아이디어를 따라서 옵션 등 파생상품의 price를 구해보고 이를 웹을 통해서 구현해 보는 프로젝트
- 공동 논의를 통해 도출한 관심 프로젝트

- 참조 사이트

<http://www.python-for-finance.com/>



PYTHON FOR FINANCE

Analyze Big Financial Data

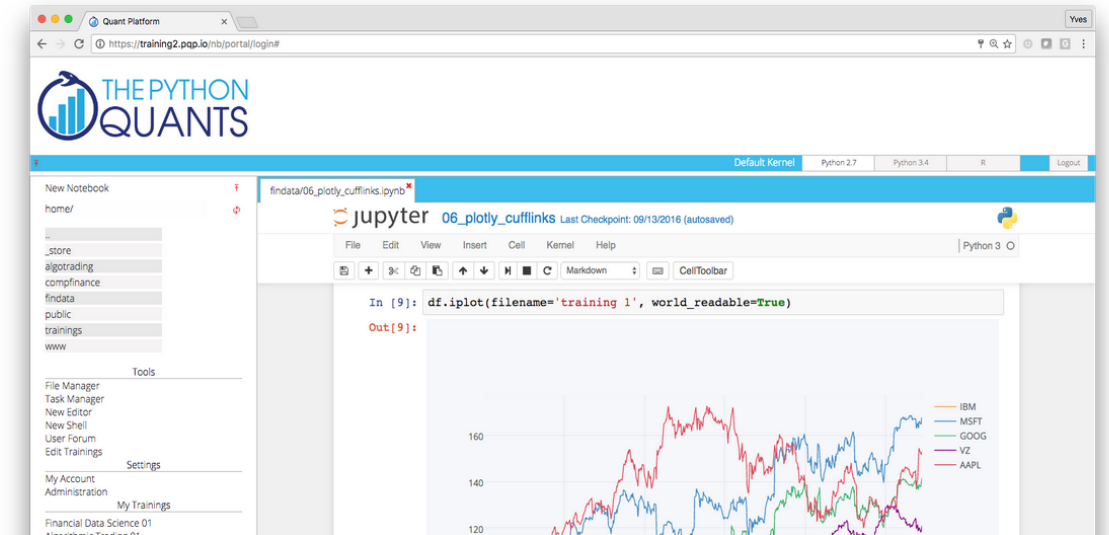
What to do?

- 브라우저에서 Black Schole 공식을 통해서 옵션의 가격을 구해볼 수 있는 사이트를 만들자!
- Black-Scholes 방정식을 이해하고,
- Python-Django를 통해서 사이트를 구성!



Quant Platform

Browser-based Financial Analytics and Applications



- 요즘 IT 개발의 추세는 오픈소스를 활용하는 것
- 다른 사람이 개발해 놓은 결과를 어떻게 활용하는가?

DX Analytics »

THE PYTHON QUANTS

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 - Copyright, License & Disclaimer

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DX Analytics

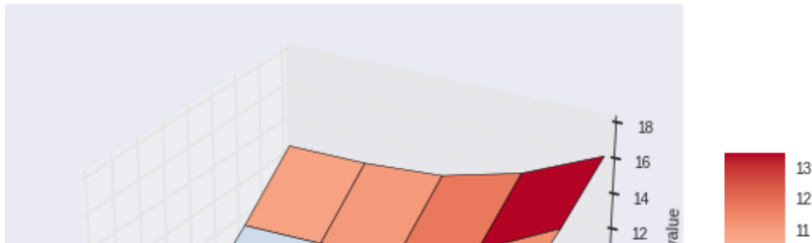
DX Analytics is a **Python-based financial analytics library** (in its early stages) which allows the modeling of rather complex derivatives instruments and portfolios. Make sure to fully understand what you are using this library for and how to apply it. Please also read the license text and disclaimer.

You find the **Github repository** under <http://github.com/yhilpisch/dx>.

Basic Philosophy

DX Analytics is a Python-based financial analytics library that mainly implements what is sometimes called the **global valuation of (complex portfolios of) derivatives instruments** (cf. <http://bit.ly/1ST0Ewb>). The major characteristic of this approach is the **non-redundant modeling** of all components needed for the valuation (e.g. risk factors) and the **consistent simulation and valuation** of all relevant portfolio components (e.g. correlated risk factors, multi-risk derivatives and portfolios themselves).

With DX Analytics you can, for instance, model and risk manage multi-risk derivatives instruments (e.g. American maximum call option) and generate 3-dimensional **present value surfaces** like this one:



- <https://github.com/yhilpisch/dx>
- 소스코드는 git 으로 공유한다: github에 대해서 알아보기!

The screenshot displays the GitHub interface for the repository `yhilpisch / dx`. At the top, there are navigation links for Features, Business, Explore, and Pricing, along with a search bar and a sign-in/sign-up prompt. The repository name is followed by statistics: 55 Watchers, 210 Stars, and 111 Forks. Below this, there are tabs for Code, Issues (2), Pull requests (2), Projects (0), Pulse, and Graphs. The main section is titled "DX Analytics" and shows repository details: 28 commits, 1 branch, 0 releases, 1 contributor, and the license AGPL-3.0. A bar chart shows the commit history. Below the details, there are buttons for "Branch: master", "New pull request", "Find file", and "Clone or download". The file list shows the following files and their commit history:

File	Commit Message	Commit Date
data	Migration to Python 3.	7 months ago
dx	Migration to Python 3.	7 months ago
.gitignore	Migration to Python 3.	7 months ago
00_dx_quickstart.ipynb	Migration to Python 3.	7 months ago
01_dx_frame.ipynb	Migration to Python 3.	7 months ago
02_dx_models.ipynb	Migration to Python 3.	7 months ago
03_dx_valuation_single_risk.ipynb	Migration to Python 3.	7 months ago

<https://www.continuum.io/downloads>

아나콘다, Python 3.6 version을 활용합니다




The screenshot shows the Anaconda download page for Windows. The page has a header with the Anaconda logo and navigation links. The main content area is titled "DOWNLOAD ANACONDA NOW" and features a large green button labeled "64-BIT INSTALLER (422M)" for Python 3.6 version. The text "Python 3.6 version" is circled in blue. Below this, there is a section for "Anaconda 4.3.1 For Windows" with instructions on how to install it. The instructions are: 1. Download the installer, 2. Optional: Verify data integrity with MD5 or SHA-256, and 3. Double-click the .exe file to install Anaconda and follow the instructions on the screen. There is also a link to the Changelog and a note about using zipped Windows installers behind a firewall. On the right side, there is a section for "Python 2.7 version" with a blue button labeled "64-BIT INSTALLER (414M)".

ANACONDA
Powered by Continuum Analytics

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DOWNLOAD ANACONDA NOW

Download for   

Anaconda 4.3.1 For Windows

Anaconda is BSD licensed which gives you permission to use Anaconda commercially and for redistribution.

[Changelog](#)

1. Download the installer
2. Optional: Verify data integrity with [MD5](#) or [SHA-256](#) [More info](#)
3. Double-click the .exe file to install Anaconda and follow the instructions on the screen

Behind a firewall? Use these [zipped Windows installers](#)

Python 3.6 version

64-BIT INSTALLER (422M)

[32-BIT INSTALLER \(348M\)](#)


Python 2.7 version

64-BIT INSTALLER (414M)

[32-BIT INSTALLER \(339M\)](#)

<https://www.djangoproject.com/>

Python을 통해서 웹 서비스를 쉽게 만들 수 있는 Django frameworks

 The web framework for perfectionists with deadlines.

OVERVIEW DOWNLOAD DOCUMENTATION NEWS COMMUNITY CODE ABOUT ♥ DONATE

Django makes it easier to build better Web apps more quickly and with less code.

Get started with Django

Meet Django

Django is a high-level Python Web framework that encourages rapid development and

Download latest release: 1.11.1

[DJANGO DOCUMENTATION >](#)

To do list

공통

1. Python을 anaconda를 통해서 설치하고 실행해보기 (version 3!)
 - ✓ Spyder, ipython, jupyter 등 실행하기
 - ✓ <https://wikidocs.net/2824> 의 01~07 파이썬기본강좌를 따라해 보기 (다른 좋은 교재있음 추천바람)
2. Github에 계정 만들고 파일 올려보기 (bitbucket도 방문해 보길)
 - ✓ Git이 무엇인지 알아보기
 - ✓ 생활코딩 <https://opentutorials.org/course/2708> 참조
 - ✓ 절대 git을 한번에 전부 알려고하지 말것!,
github계정 만들고 소스 올려서 공유하는 파일저장
남의 코드를 포크, 클론 하는 방법으로 일단 충분함



To do list

Web 개발 조원들

3. Django tutorial을 따라해 보고 좌절하기 (한번에 이해하기 힘들.. MVC는 무얼까?)

프레임워크를 처음
접해보면 개념 잡는 게 쉽지
않을 수 있음. 무조건
따라해본다는 생각으로
localhost:8080 에 hello
world 만 띄우면 성공!

The screenshot shows the Django documentation website. The header is dark green with the Django logo and tagline 'The web framework for perfectionists with deadlines.' Navigation links include OVERVIEW, DOWNLOAD, DOCUMENTATION (highlighted), NEWS, COMMUNITY, CODE, ABOUT, and DONATE. The main content area is titled 'Documentation' and features the article 'Writing your first Django app, part 1'. The article text includes: 'Let's learn by example.', 'Throughout this tutorial, we'll walk you through the creation of a basic poll application.', 'It'll consist of two parts:', a bulleted list of two parts (a public site and an admin site), and instructions on how to verify Django installation using the command `$ python -m django --version`. A code block shows the command. Below the code block, it says: 'If Django is installed, you should see the version of your installation. If it isn't, you'll get an error telling "No module named django".' On the right sidebar, there is a search bar, a 'Support Django!' section with a donation link, and a 'Contents' section with a list of links: 'Writing your first Django app, part 1', 'Creating a project', 'The development server', and 'Creating the Polls app'. There are also buttons for 'Language: en' and 'Documentation version: 1.11'.

django The web framework for perfectionists with deadlines.

OVERVIEW DOWNLOAD DOCUMENTATION NEWS COMMUNITY CODE ABOUT ♥ DONATE

Documentation

Writing your first Django app, part 1

Let's learn by example.

Throughout this tutorial, we'll walk you through the creation of a basic poll application.

It'll consist of two parts:

- A public site that lets people view polls and vote in them.
- An admin site that lets you add, change, and delete polls.

We'll assume you have **Django installed** already. You can tell Django is installed and which version by running the following command in a shell prompt (indicated by the \$ prefix):

```
$ python -m django --version
```

If Django is installed, you should see the version of your installation. If it isn't, you'll get an error telling "No module named django".

Search 1.11 documentation

Support Django!

vwoody donated to the Django Software Foundation to support Django development. Donate today!

Contents

- [Writing your first Django app, part 1](#)
 - [Creating a project](#)
 - [The development server](#)
 - [Creating the Polls app](#)

Language: en Documentation version: 1.11

To do list

금융공학 조원들

4. 금융공학책을 1시간에 한 권씩 독파(?)하기 (수박 겉핥기)

Black-Scholes 유도는 나중에 한번 같이 합니다

Black-Schole formula 구경하기

