



Be More {Productive, Collaborative} with {Git, GitHub}

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SimTk Meeting
October 16, 2012

git :: overview

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 - cvs, svn, hg, bzt

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 - cvs, svn, hg, bzt
- support for distributed, non-linear development
- originally developed for managing the linux kernel by linus torvalds
- extremely flexible, can be complicated

git :: simple workflow

make a local copy of a repository

\$ git clone <url>

\$ vi new_module.py

stage your work

\$ git add new_module.py

commit early and often -- local

\$ git commit -m "Sweet new feature!"

upload your changes to the remote

\$ git push

github :: overview

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 - used by facebook, twitter, mozilla, ...
 - hosts numpy, scipy, ipython, matplotlib, ...

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- \$100M in VC funding this summer at \$750M valuation
- center of the open source “do-ocracy”

github :: collaborative

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- pull requests
 - accept contributions from the community without giving up control.
 - manage concurrent development across features / branches


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- issues
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github :: pull requests

The screenshot shows a web browser window with multiple tabs open. The active tab is a GitHub pull request for the repository `SimTk/msmbuilder`. The URL in the address bar is `https://github.com/SimTk/msmbuilder/pull/39`. The GitHub logo and navigation links are visible at the top. The repository name `SimTk/msmbuilder` is prominently displayed. Below the repository name, there are tabs for `Code`, `Network`, `Pull Requests` (which is selected and shows 1 request), `Issues` (13), `Wiki`, `Graphs`, and `Admin`. A summary bar indicates that the pull request is **Closed**, initiated by `rmcgibbo` to merge 37 commits into the `master` branch from the `msmio` branch. It shows 3,898 changes and is labeled #39. Below this, there are links for `Discussion`, `Commits` (37), and `Files Changed` (56). The main content area shows the pull request details: it was opened a month ago by `rmcgibbo` with the title **Serializer replacement / rewrite of Project**. It includes an `Edit` button and a **Closed** status. The description mentions `@kyleabeauchamp` and lists two points: 1. Replaces the `Serializer.py` file with `msmio.py`, which contains `saveh` and `loadh` functions for saving and loading numpy arrays to hdf5 files. 2. Replaces `Project` with a version that loads and saves from flat text. On the right, a summary of changes shows **+2,283 additions** and **-1,615 deletions**. At the bottom, it shows 5 participants and a recent commit by `rmcgibbo` titled `(np.savez/np.load)-like Serializer replacement` with commit hash `4f2f1f0`.


github :: pull requests

 schwancr started a discussion in the diff 4 days ago

TestFiles/TestWrappers.py [View full changes](#)

```
... @@ -181,16 +179,16 @@ def test_f_CalculateImpliedTimescales(self):
188 -     # make a predictable stream of random numbers by seeding the RNG with 42
189 -     random_source = np.random.RandomState(42)
190 -     randomconfs = GetRandomConfs.run(P1, Assignments, NumRandomConformations, random_source)
191 -
192 -     reference = Trajectory.load_trajectory_file(os.path.join(ReferenceDir, "2RandomConfs.lh5"))
193 -     self.assert_trajectories_equal(reference, randomconfs)
182 + # def test_g_GetRandomConfs(self):
183 + #     P1 = Project.load_from(ProjectFn)
184 + #     Assignments = io.loadh("Data/Assignments.Fixed.h5", 'arr_0')
185 + #
186 + #     # make a predictable stream of random numbers by seeding the RNG with 42
187 + #     random_source = np.random.RandomState(42)
188 + #     randomconfs = GetRandomConfs.run(P1, Assignments, NumRandomConformations, random_source)
189 + #
190 + #     reference = Trajectory.load_trajectory_file(os.path.join(ReferenceDir, "2RandomConfs.lh5"))
191 + #     self.assert_trajectories_equal(reference, randomconfs)
```

2

 schwancr [repo collab](#) 4 days ago  

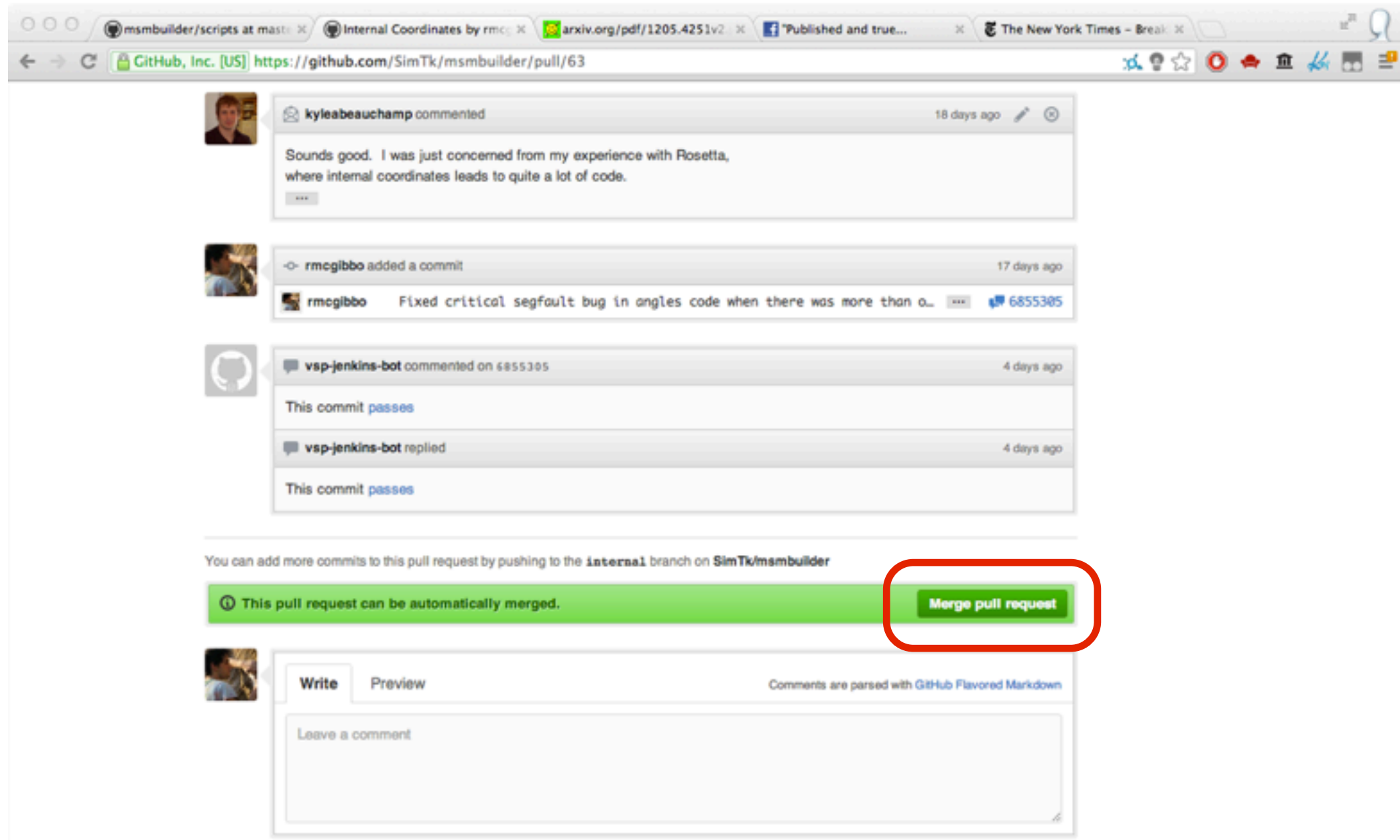
Why are these commented out?

 rmcgibbo [repo collab](#) 4 days ago  

Because I was lazy, and when I deleted GetRandomConfs.py I didn't readjust them.

[Add a line note](#)

github :: pull requests



github :: issues

13 open issues 59 closed issues Submitted Updated Comments

Close Label Assignee Milestone

- ☐ #71 **Avoid copy/paste code for logging.** style
by rmcgibbo 2 days ago 5 comments
- ☐ #67 **PDB Reader should preserve ResidueID**
by kyleabeauchamp 3 days ago
- ☐ #60 **Implement history functionality in ProjectBuilder/ConvertDataToHDF.py**
by tjlane 3 days ago
- ☐ #41 **Proposed changes to Trajectory** question
by kyleabeauchamp 3 days ago 28 comments
- ☐ #52 **Make docstrings render nicely**
by rmcgibbo 3 days ago 2 comments
- ☐ #16 **MLE getting stuck for hours** question possible bug
by rmcgibbo 3 days ago 8 comments
- ☐ #58 **Trajectory Should Contain Timestep Metadata.** enhancement question
by tjlane 3 days ago 7 comments
- ☐ #70 **Write test for SaveStructures.py**
by rmcgibbo 3 days ago
- ☐ #63 **Internal Coordinates**
by rmcgibbo 11 days ago Code Attached 6 comments

github :: issues



rmcgibbo commented

25 days ago

@tjlane: Do you want to start hacking the fahproject stuff on this?

I think the `validators` mechanism here will generalize pretty well for the FaH stuff.

basically, you do

```
pb = ProjectBuilder(...)
pb.add_validator(validators.RMSDExplosionValidator(structure_or_filename='native.pdb', max_rmsd=0.1))

project = pb.get_project()
project.save('ProjectInfo.yaml')
```



tjlane commented

25 days ago

Sweet! Nice work. Especially like the Validators -- I wouldn't worry about adding more, just documenting how they work so people can add them if necessary.

I'll get cracking on this in a bit.

github :: beautiful

github :: beautiful

- the little things make it useful
 - low friction, lightweight “project management”
 - code highlighting
 - diff discussion
 - reply to comments via email
 - web hooks

github :: extensible

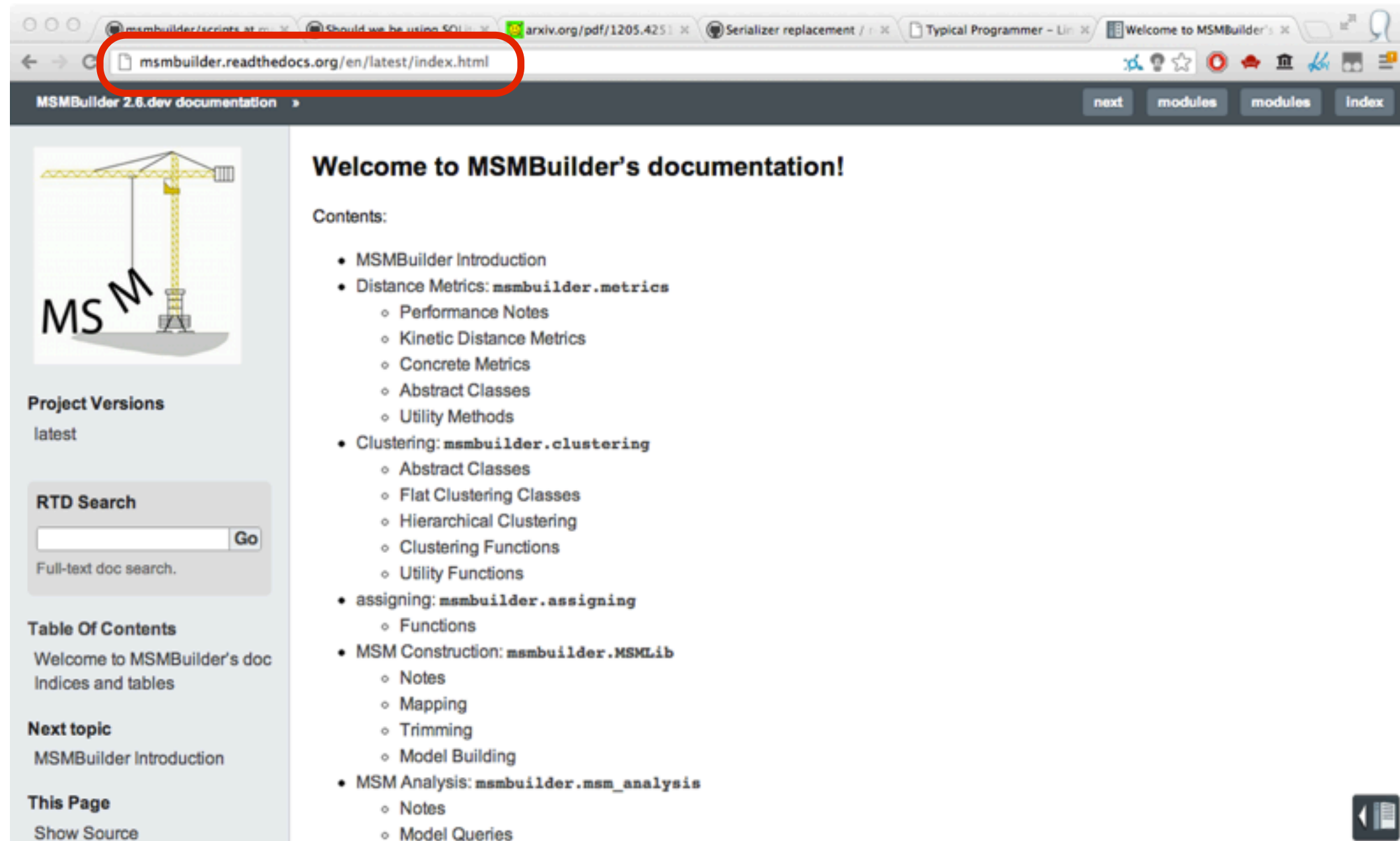
github :: extensible

- continuous integration
 - run the build/test suite after every commit across a matrix of configurations
 - TravisCI, CircleCI

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- continuous integration
 - run the build/test suite after every commit across a matrix of configurations
 - TravisCI, CircleCI
- documentation generation and hosting
 - build the documentation, host it in the cloud
 - ReadTheDocs.org

github :: readthedocs.org



The screenshot shows a web browser window with the URL `msmbuilder.readthedocs.org/en/latest/index.html` highlighted in the address bar. The page title is "MSMBuilder 2.6.dev documentation". The main content area is titled "Welcome to MSMBuilder's documentation!" and lists the following contents:

- MSMBuilder Introduction
- Distance Metrics: `msmbuilder.metrics`
 - Performance Notes
 - Kinetic Distance Metrics
 - Concrete Metrics
 - Abstract Classes
 - Utility Methods
- Clustering: `msmbuilder.clustering`
 - Abstract Classes
 - Flat Clustering Classes
 - Hierarchical Clustering
 - Clustering Functions
 - Utility Functions
- assigning: `msmbuilder.assigned`
 - Functions
- MSM Construction: `msmbuilder.MSMLib`
 - Notes
 - Mapping
 - Trimming
 - Model Building
- MSM Analysis: `msmbuilder.msm_analysis`
 - Notes
 - Model Queries

The left sidebar contains a logo with the letters "MSM" and a crane, a "Project Versions" section showing "latest", an "RTD Search" box with a "Go" button, a "Table Of Contents" section with links to "Welcome to MSMBuilder's doc" and "Indices and tables", a "Next topic" section with a link to "MSMBuilder Introduction", and a "This Page" section with a link to "Show Source".

github :: travis-ci.org

The screenshot shows the Travis CI web interface for the `matplotlib/matplotlib` repository. The browser's address bar displays `https://travis-ci.org/matplotlib/matplotlib`. The interface includes a navigation bar with links for Home, Stats, Blog, and Docs, and a user profile for Robert McGibbon. A sidebar on the left lists recent builds for various repositories, including `robotex82/ecm_cms` and `lyrix/Silex-Kitchen-Edition`. The main content area shows the current build status for `matplotlib/matplotlib`, which is in progress (yellow circle). It provides details about the build, including the commit `8df51a7 (v1.2.x)`, the duration of 11 minutes and 19 seconds, and the author `Eric Firing`. A build matrix table is also displayed, showing four jobs with durations ranging from 6 to 11 minutes. The right sidebar features a 'Sponsors' section with logos for `mongoHQ` and `kanbanery`, and a 'Workers' section listing various worker nodes. A 'Queue: Common' section at the bottom right shows a list of pending builds for `robotex82/ecm_cms`.

travis

Home Stats Blog Docs

Robert McGibbon

Fork me on GitHub

matplotlib/matplotlib

Current Build History Pull Requests Branch Summary

Build 442 Commit 8df51a7 (v1.2.x)

Finished - Compare 1389

Duration 11 min 19 sec Author Eric Firing

Committer Eric Firing

Message Remove unused autolayout_validator() from rcsetup

Build Matrix

Job	Duration	Finished	Python
442.1	6 min 29 sec	5 minutes ago	2.6
442.2	8 min 50 sec	2 minutes ago	2.7
442.3	11 min 19 sec	-	3.1
442.4	10 min 21 sec	-	3.2

Sponsors

mongoHQ

看 kanbanery

See all of our amazing sponsors →

Workers

jvm-otp1.worker.travis-ci.org
jvm-otp2.worker.travis-ci.org
pdp1.worker.travis-ci.org
pdp2.worker.travis-ci.org
pdp3.worker.travis-ci.org
pdp4.worker.travis-ci.org
rails1.worker.travis-ci.org
ruby1.worker.travis-ci.org
ruby2.worker.travis-ci.org
ruby3.worker.travis-ci.org
ruby4.worker.travis-ci.org
spree.worker.travis-ci.org

Queue: Common

robotex82/ecm_cms #13.6
robotex82/ecm_cms #13.7
robotex82/ecm_cms #13.8
robotex82/ecm_cms #13.9

github :: simtk.org synergy

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- source code management is not our speciality; we can leverage external tools

github :: simtk.org synergy

- source code management is not our speciality; we can leverage external tools
- simtk.org and github have distinct and complementary core competencies
 - simtk.org as project “front end” to centralize and advertise
 - github as a “back end” for source control and developer tools





git :: criticisms

I didn't really expect anyone to use [Git] because it's so hard to use, but that turns out to be its big appeal. No technology can ever be too arcane or complicated for the black t-shirt crowd. - Fake Interview with Linus Torvalds