QuantNet 2.0 @ GitHub

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Outline

What is GitHub?

- A distributed version control system (Git)
- A collaboration platform (Hub)
- Quasi-standard among software developers:
  42.9% of professional software developers use git in some fashion

Why use GitHub?

- Version control
- Distributed development
- Easy branching and merging
- Integration with many IDEs
- Issue management

GitHub

Terminology and Workflow

Accessing GitHub

GitHub and QuantNet 2.0

Create Repository

- Most basic element of GitHub
- A project folder containing *all* project files
- Also contains a revision history for each file
- Contains an issue tracker

Manage Issues

Use GitHub issues to record and discuss

- Ideas
- Bugs
- Enhancements
- Tasks

You get a searchable history of your discussions!

You can neatly organize any discussion with issue classes

Branch Code

Branching allows you to

- work on a copy of the master branch
- to make changes without affecting the whole of the code base

Commit Changes

A commit

- essentially uploads new versions of files
- is tracked, so you have a history of changes available
- can be rolled back

Issue Pull Request

A pull request

- asks your collaborators to consider your changes for integration into the master branch
- can be issued at any time, e.g. to share screenshots
- can be augmented by a pull request message to ask for help or @mention other contributors in order to induce them to comment
- initiate a discussion of the changes you made

Merge Branches

A merge

- integrates your code into the master branch
- preserves a history of your changes by keeping the pull requests (searchable)

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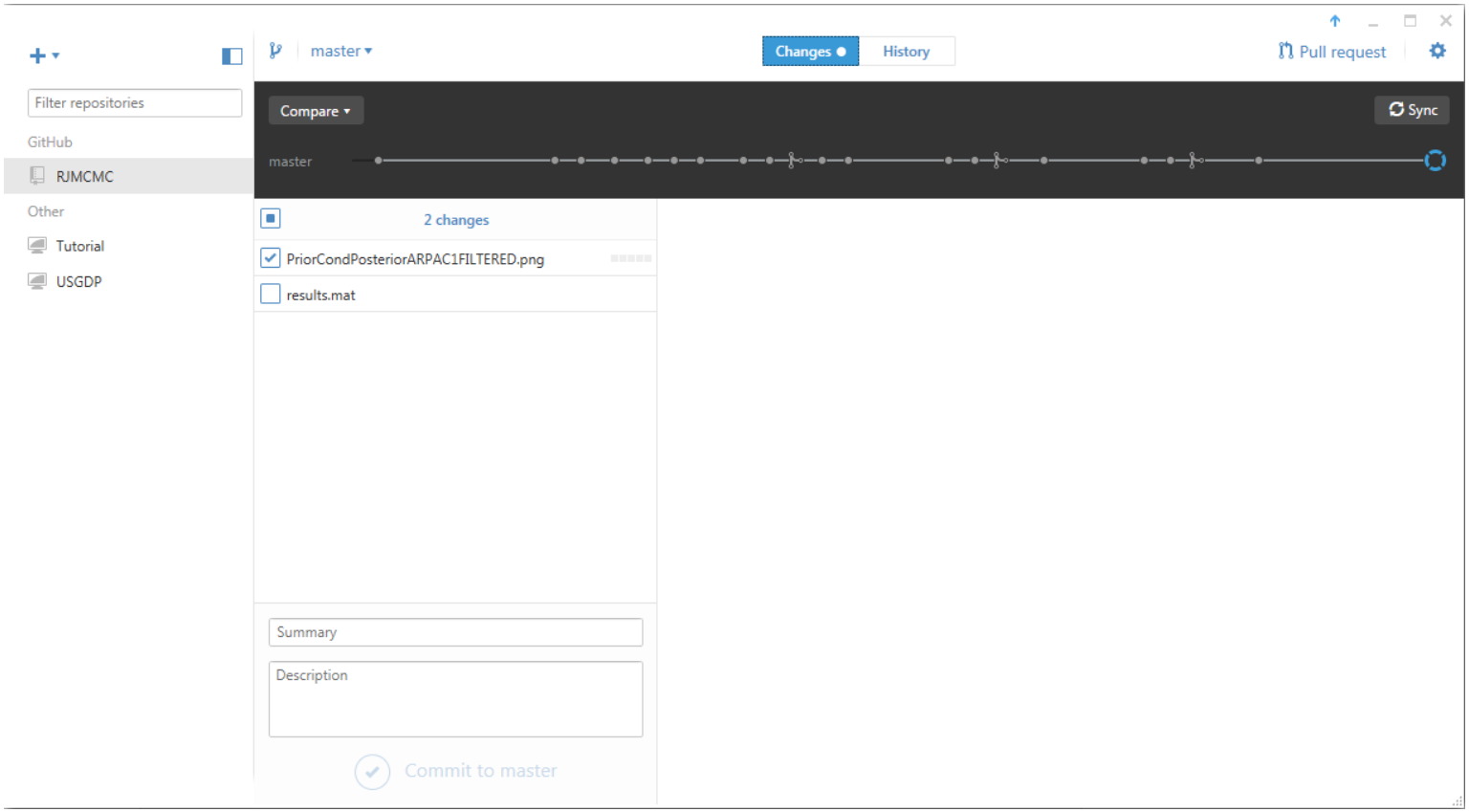
GitHub Desktop App



Web Interface

This repository Search Pull requests Issues Gist

neuhoffd / RJMCMC

Unwatch 1 Star 0 Fork 0

Branch: master RJMCMC / evaluatePosterior.m

neuhoffd Three ffa5685 on 8 Oct

1 contributor

8 lines (7 sloc) 329 Bytes Raw Blame History

```
function [logPosterior] = evaluatePosterior(state, settings)
    %Returns the log posterior as sum of the log prior as well as the log likelihood
    %as supplied
    [logPrior] = evaluatePrior(state, settings);
    [logLikelihood] = settings.likelihoodFunction(state, settings);

    logPosterior = logPrior + logLikelihood;
end
```

Command Line

```
posh~git ~ RJMCMC [master]
Windows PowerShell
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Daniel\Documents\GitHub> cd D:\Documents\Dropbox\Quantnet\RJMCMC
D:\Documents\Dropbox\Quantnet\RJMCMC [master +2 ~0 -0 !]> git status
On branch master
Your branch is up-to-date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        PriorCondPosteriorARPAC1FILTERED.png
        results.mat

nothing added to commit but untracked files present (use "git add" to track)
D:\Documents\Dropbox\Quantnet\RJMCMC [master +2 ~0 -0 !]> git add *.png
D:\Documents\Dropbox\Quantnet\RJMCMC [master +1 ~0 -0 ! +1 ~0 -0 !]> git commit

Aborting commit due to empty commit message.
D:\Documents\Dropbox\Quantnet\RJMCMC [master +1 ~0 -0 ! +1 ~0 -0 !]> git commit
-m "Screenshot"
[master 0b367e6] Screenshot
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 PriorCondPosteriorARPAC1FILTERED.png
D:\Documents\Dropbox\Quantnet\RJMCMC [master +1 ~0 -0 !]>
```

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What I did

1. Create GitHub repository
2. Move code into GitHub repository
3. Develop with an eye on style guidelines
4. Write readme.md
5. Declare running version ready for audit

After the audit is complete, the code is forked to a specific GitHub repository and appears on the QuantNet 2.0 page

What else could one do?

- Collaborate with other scientists around the world using the GitHub workflow
- Fork existing Quantlets in order to improve or extend them (ask the original author!!!!)
- Use Pulse and Graphs to track contributions and progress
- Use Milestones to structure a project

Thank you for your attention!