Using Github for research and life

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Contents

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This document can be found at https://github.com/darwinanddavis

Install git

Mac users
Install git.

Windows users
Install git with Git Bash. Git Bash is a text editor for running git commands.

Once git is on your computer, you can now access its features using either just your local computer for version control or your Github account for version control on the cloud.

Create a Github account

Create your new Github account. Some tips on creating an account:

- Choose a username that you plan to keep. Something that represents your professional acumen, e.g. not "matt_loves_hiphop86"

- Github is universal and really useful. You can connect to programming, troubleshooting, userX sites, and coding libraries, e.g. CodePen, using your Github account, so plan for longevity.

Feel free to navigate my personal Github page. Everything is publicly available.

www.github.com/darwinanddavis

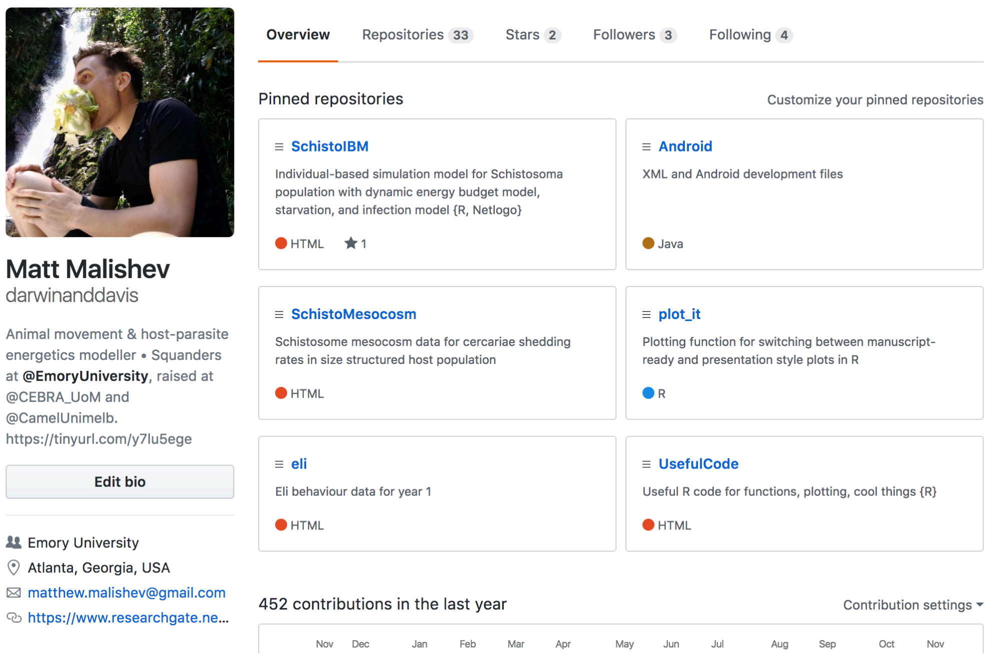
Some essential elements of your Github page:

- Your repositories. This is where you store your online information.

- Your gits. These are the digital footprints of your changes. We use this for version control.

- Your README.md file. This tells users what your repo contains, instructions for running code, troubleshooting, version control, links to external web sources, and other git specific elements, such as program/package versions.

Here are some screenshots of what you'll see on your own github page.



Matt Malishev
darwinanddavis

Animal movement & host-parasite energetics modeller • Squanders at **@EmoryUniversity**, raised at @CEBRA_UoM and @CamelUnimelb. https://tinyurl.com/y7lu5ege

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https://www.researchgate.ne...

Pinned repositories

SchistoIBM
Individual-based simulation model for Schistosoma population with dynamic energy budget model, starvation, and infection model {R, Netlogo}
HTML ★ 1

Android
XML and Android development files
Java

SchistoMesocosm
Schistosome mesocosm data for cercariae shedding rates in size structured host population
HTML

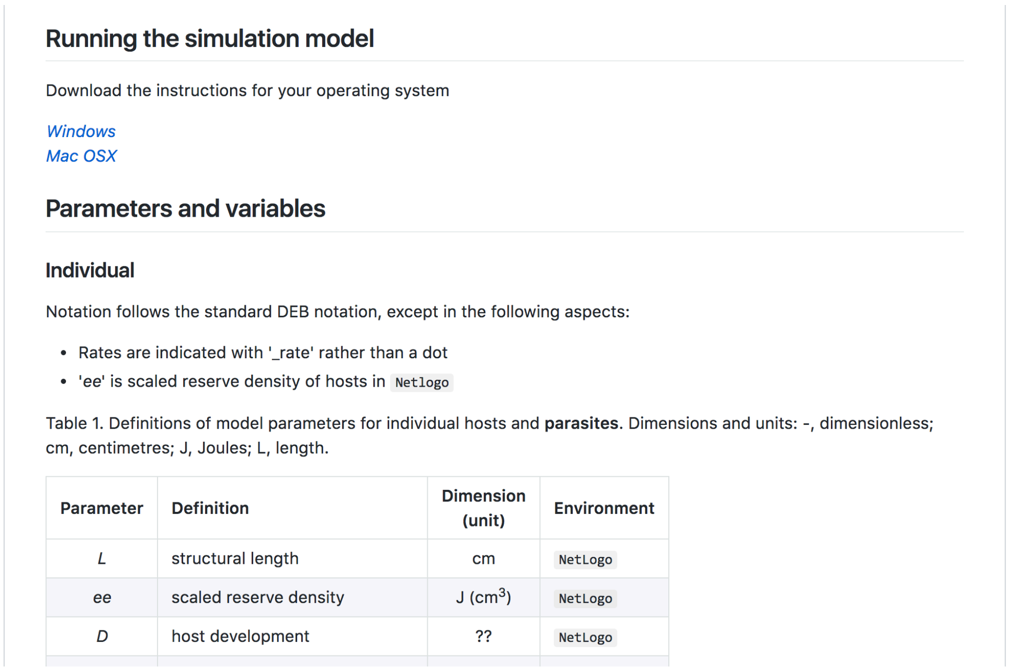
plot_it
Plotting function for switching between manuscript-ready and presentation style plots in R
R

eli
Eli behaviour data for year 1
HTML

UsefulCode
Useful R code for functions, plotting, cool things {R}
HTML

452 contributions in the last year

Figure 1: Github loading page



Running the simulation model

Download the instructions for your operating system

Windows
Mac OSX

Parameters and variables

Individual

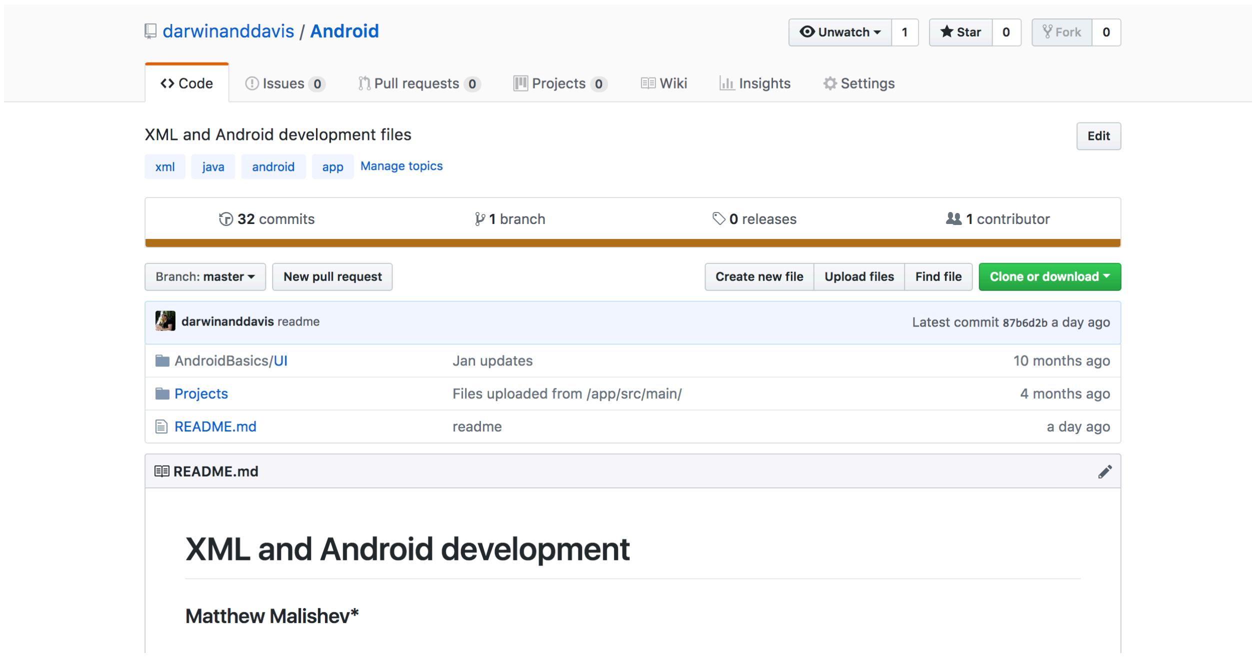
Notation follows the standard DEB notation, except in the following aspects:

- Rates are indicated with '_rate' rather than a dot
- 'ee' is scaled reserve density of hosts in `Netlogo`

Table 1. Definitions of model parameters for individual hosts and **parasites**. Dimensions and units: -, dimensionless; cm, centimetres; J, Joules; L, length.

Parameter	Definition	Dimension (unit)	Environment
L	structural length	cm	`NetLogo`
ee	scaled reserve density	J (cm^3)	`NetLogo`
D	host development	??	`NetLogo`

End installation instructions. The following sections contain reference guides for using git and bash commands (talking to git). Familiarise yourself with these beforehand.



XML and Android development files

darwinanddavis readme — Latest commit 87b6d2b a day ago

AndroidBasics/UI	Jan updates	10 months ago
Projects	Files uploaded from /app/src/main/	4 months ago
README.md	readme	a day ago

README.md

XML and Android development

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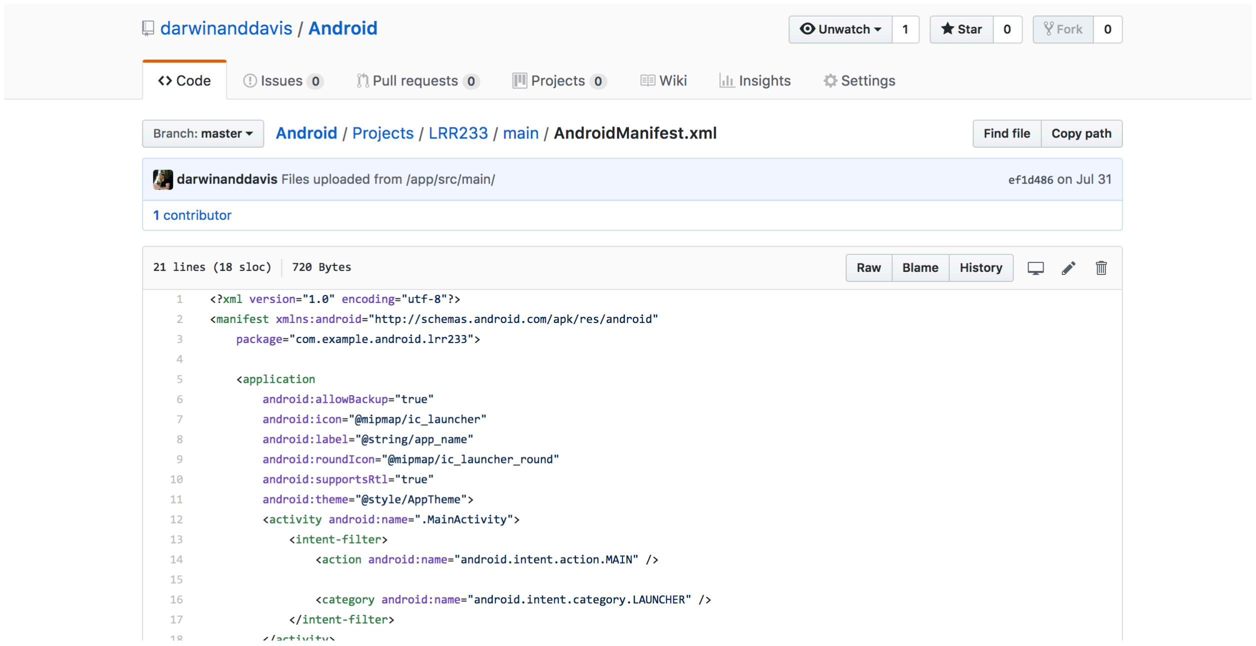
Figure 2: Repository loading page



darwinanddavis Files uploaded from /app/src/main/ — ef1d486 on Jul 31

1 contributor

21 lines (18 sloc) | 720 Bytes

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.android.lrr233">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
```

Figure 3: Inside of a file in a repository

Using git and Github

We'll be using the command line to talk with git.

- In Mac, this is found in *Applications > Terminal*.

- In Windows, open the **Git Bash** application.

Commmon git syntax

Note: commands require spaces between terms.

Common `git` phrases

init = initialise your git
push = push your changes to a remote repository
pull = pull changes made remotely to match local git changes
fetch = re-align git changes from origin (remote) to master (local) branch

Configure your credentials

```
git config --global user.name "<your name>"
git config --global user.email "<your email>"
```

initialise a new git (local)

```
git init
```

add all files in directory to git (local)

```
git add .
```

add individual file (local)

```
git add abstract.txt
```

check git activity (local)

```
git status
```

add remote origin source to push git (remote)

```
# two options
get remote set-url origin https://github.com/darwinanddavis/newtest.git
git remote add origin https://github.com/darwinanddavis/newtest.git
```

push git changes to origin (your remote location) from your master (local) branch

```
git push origin master
```

check latest git activity (local)

```
git log
```

check what remote locations you have available to push your gits

```
git remote -v # v = verbose
```

add another remote destination (on github) called 'github' (remote) and push your staged git (file changes) to that remote location from your master (local) branch

```
git remote add github https://github.com/darwinanddavis/newtest.git
git push github master
```

See these references for a brief intro to using the command line in Mac and Windows.

Useful command line syntax

Note: commands require spaces between terms.

`cd ~/Documents` change working dir to 'Documents'. `cd ..` move one level up

`pwd` print current working dir

`ls` list files in working dir

`mkdir newfolder` make new working dir

`touch text.txt` create new file (called text.txt)

More useful syntax

Note: commands require spaces between terms.

copy files from *source* to *destination*. e.g. cp /Users/mydir/README.txt ~/Documents
`cp source destination`

copy all folders, subfolders, and files from *source* to *destination*
`cp -R source destination`

move files or folders from *source* to *destination* (no need for `-R`)
`mv source destination`

move multiple files with the * wildcard, which copies all .rtf files. The tilde (~) symbol is a shortcut for your Home folder, which contains '/Desktop'.
`cp ~/Desktop/*.rtf ~/Documents`

rename files

```
mv ~/Desktop/MyFile.rtf ~/Desktop/MyFile-old.rtf
cp ~/Desktop/MyFile.rtf ~/Documents/MyFile-old.rtf
```

Example of command line workflow

Install 'gitbash' to use Linux/Mac capabilities if not already

Open *Terminal/cmd*

```
cd ~/Documents/ # change working dir
ls # list dir contents
```

Open *Finder/Windows*. Make a new project on your local comp.

```
# create new project
### <b>
cd ~/Documents
### </b>
# create new file
### <b>
touch test.txt
open test.txt
### </b>
```

```
# make a new folder
### <b>
mkdir newgit
### </b>
# navigate to that folder
### <b>
cd newgit
ls -a
### </b>
```

Create a new file in the command line

```
# navigate to your new git repo
### <b>
pwd
cd ~/Documents/newgit
### </b>

# move the new file into the git repo
### <b>
mv ~/Documents/test.txt ~/Documents/newgit
ls
### </b>
```

References

Installing git

Sign up to Github

Version control with git

Terminal in Mac

Command line in Windows

Maintainer

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