CPCZurich2022 Practical Tutorial D

Reinforcement Learning using hBayesDM

Installation Guide

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This tutorial will make use of the R version of the hBayesDM package. There two parts in this installation guide, one dedicated to the installation on **Windows** (part A) and the other to the installation on **macOS** (part B).

A) How to install R version hBayesDM on Windows:

1. Install **R** (>= version 4.2.0)
https://cran.r-project.org/bin/windows/base/

2. Install **Rstudio**
https://www.rstudio.com/products/rstudio/download/#download

3. Install **Rtools**

1) Download and run the installer: https://cran.r-project.org/bin/windows/Rtools/

2) Open R studio. In R studio Console, run this code

```
writeLines('PATH="${RTOOLS42_HOME}\\usr\\bin;${PATH}"', con = "~/.Renviron")
```

3) Restart R
Use the menu item Session > Restart R or the associated keyboard shortcut Ctrl + Shift + F10.

4) Verify that "make" can be found, which should show the path to your Rtools installation. ★ If the path cannot be found, reboot your PC.

```
Sys.which('make')
## should result in "C:\\rtools42\\usr\\bin\\make.exe"
```

5) If this works, you can try to install an R package from source:

```
install.packages('jsonlite', type = 'source')
```

6) Install the latest version of **rstan**
   Install the latest version of rstan by typing the following command in R studio
   Console:

```
install.packages('rstan')
```

7) Install **hBayesDM**
   Install the latest version of hBayesDM through GitHub:

```
# install devtools if not installed yet
if (!require(devtools)) install.packages("devtools")
# install hBayesDM through GitHub
devtools::install_github("CCS-Lab/hBayesDM", ref="develop", subdir="R
")
```

8) Verify that the following test code runs without any error:

```
library(hBayesDM)
# Test if the package works fine using example data
output1 = gng_m1(data="example", niter=2000, nwarmup=1000, nchain=2,
ncore=2)
# plot the output
plot(output)
```

> **Commented [AH1]:** Error in gng_m1(data = "example", niter = 2000, nwarmup = 1000, nchain = 2, :
> ** Example data for this task does not exist **

> **Commented [AH2]:** Should be plot(output1) probably

For more information, please check this tutorial:
https://ccs-lab.github.io/hBayesDM/articles/getting_started.html

B) How to install R version hBayesDM on macOS:

1. Install **R** (>= version 4.2.0)
https://cran.r-project.org/bin/macosx/

2. Install **Rstudio**
https://www.rstudio.com/products/rstudio/download/#download

3. Remove ~/.R
If there is a folder named .R in your home directory (~/.R), remove it. You could remove
it manually by searching the files or by typing the following command in Terminal. See
this link to open or quit Terminal on Mac
(https://support.apple.com/guide/terminal/apd5265185d-f365-44cb-8b09-
71a064a42125/mac).

```
rm -R ~/.R
```

4. Install the latest version of **rstan**
Install the latest version of rstan by typing the following command in R command line:

```
install.packages("rstan", repos = "https://cloud.r-project.org/", dep
endencies = TRUE)
```

During the installation of rstan, you may get an error message that you have not agreed to the Xcode license agreements. Then, please run 'sudo xcodebuild -license' in Terminal to review and agree to the Xcode license agreements.

5. Install **hBayesDM**
Install <u>the latest</u> version of hBayesDM through GitHub:

```
# install devtools if not installed yet
if (!require(devtools)) install.packages("devtools")
# install hBayesDM through GitHub
devtools::install_github("CCS-Lab/hBayesDM", ref="develop", subdir="R
")
```

6. Restart RStudio
Use the menu item Session > Restart R or the associated keyboard shortcut Command + Shift + F10.

7. Verify that the following test code runs without any error:

```
library(hBayesDM)
# Test if the package works fine using example data
output1 = gng_m1(data="example", niter=2000, nwarmup=1000, nchain=2,
ncore=2)
# Plot the output
plot(output1)
```

For more information, please check this tutorial:
https://ccs-lab.github.io/hBayesDM/articles/getting_started.html

Well done! You should be all set and ready for the practical tutorial session now.

If you have trouble getting to this point before the Practical Tutorial Session, please consult the **#tutorial-helpdesk channel on Slack**. You will be given access to the CPC Slack workspace at the beginning of the course. Check if anyone has had the same issue

and has managed to solve it and how. If no one else has encountered the same problem, post your question. **Alex** will be monitoring the channel and providing support. In addition, given the volume of attendees this year, we would be really grateful if you could assist us by answering queries on Slack yourself if you come across a problem you know and have solved.

For those who need more personalized help, Alex will be offering support hours. More information on the exact time will follow.