

## Homework 1 – Geraldo Padilla Fuentes

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Project: (None)

```
11 install_cmdstan(cores = 2)
12
13 cmdstan_path()
14 cmdstan_version()
15
16 file <- file.path(cmdstan_path(), "examples", "bernoulli", "bernoulli.stan")
17 mod <- cmdstan_model(file)
18
19 mod$print()
20
21 # names correspond to the data block in the Stan program
22 data_list <- list(N = 10, y = c(0,1,0,0,0,0,0,0,0,1))
23
24 fit <- mod$sample(
25   data = data_list,
26   seed = 123,
27   chains = 4,
28   parallel_chains = 4,
29   refresh = 500 # print update every 500 iters
30 )
31
32 fit$summary()
33 mcmc_hist(fit$draws("theta"))
34
35
```

33:1 (Top Level) R Script

Environment History Connections Tutorial

Import Dataset 219 MiB

R Global Environment

Name	Type	Length	Size	Value
data_list	list	2	584 B	List of 2
file	character	1	232 B	"C:/users/Lenovo/Documents/.cm...
fit	CmdStanMCMC	32	432 B	Environment
mod	CmdStanModel	23	352 B	Environment

Console Background Jobs

R 4.2.1 ~/  
Chain 2 finished in 0.0 seconds.  
Chain 3 finished in 0.0 seconds.  
Chain 4 finished in 0.0 seconds.  
  
All 4 chains finished successfully.  
Mean chain execution time: 0.0 seconds.  
Total execution time: 1.3 seconds.  
  
> mcmc\_hist(fit\$draws("theta"))  
'stat\_bin()' using 'bins = 30'. Pick better value with 'binwidth'.  
> fit\$summary()  
# A tibble: 2 × 10  
 variable mean median sd mad q5 q95 rhat ess\_bulk ess\_t...  
 <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
1 lp\_\_ -7.26 -6.99 0.719 0.329 -8.73 -6.75 1.00 1658. 1861.  
2 theta 0.246 0.231 0.118 0.118 0.0811 0.463 1.00 1378. 1236.  
# ... with abbreviated variable name 'ess\_tail'  
> |

Files Plots Packages Help Viewer Presentation

Zoom Export Publish

A histogram showing the distribution of the parameter theta. The x-axis is labeled 'theta' and ranges from 0.0 to 0.8. The y-axis represents frequency. The distribution is unimodal and slightly right-skewed, with a peak around 0.2. The bars are blue.

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```
gbpadilla@argon-login-1:~  
Microsoft Windows [Versi3n 10.0.19043.1889]  
(c) Microsoft Corporation. Todos los derechos reservados.  
  
C:\Users\Lenovo>ssh -p 40 gbpadilla@argon.hpc.uiowa.edu  
The authenticity of host '[argon.hpc.uiowa.edu]:40 ([128.255.1.86]:40)' can't be established.  
ECDSA key fingerprint is SHA256:/2CV0aTRA8pSTQou8f2DVchBBJkOfUX1bXSzoGW0BnM.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added '[argon.hpc.uiowa.edu]:40,[128.255.1.86]:40' (ECDSA) to the list of known hosts.  
gbpadilla@argon.hpc.uiowa.edu's password:  
Duo two-factor login for gbpadilla  
  
Enter a passcode or select one of the following options:  
  
1. Duo Push to XXX-XXX-9077  
2. Phone call to XXX-XXX-9077  
3. SMS passcodes to +XX X XXXX 3302 (next code starts with: 2)  
4. SMS passcodes to XXX-XXX-9077  
  
Passcode or option (1-4): 1  
Success. Logging you in...  
Last failed login: Thu Sep  1 23:20:25 CDT 2022 from 204.141.212.135 on ssh:notty  
There was 1 failed login attempt since the last successful login.  
+-----+  
|          *****Warning Notice*****          |  
| This system is restricted solely to University of Iowa authorized users for |  
| legitimate business purposes only. The actual or attempted unauthorized access |  
| use or modification of this system is strictly prohibited by the University of |  
| Iowa. Unauthorized users are subject to the University of Iowa disciplinary |  
| proceedings and/or criminal and civil penalties under state, federal or other |  
| applicable domestic and foreign laws. The use of this system is monitored and |  
| recorded for administrative and security reasons. Anyone accessing this system |  
| expressly consents to such monitoring and is advised that if such monitoring |  
| reveals possible evidence of criminal activity, University of Iowa may |  
| provide the evidence of such activity to law enforcement officials. All users |  
| must comply with the University of Iowa security instructions regarding the |  
| protection of the University of Iowa's information. |  
+-----+  
  
General:  
Production jobs should not be run on the login nodes. The login nodes can be  
used for compiling code and prototyping jobs. If you need to do more extensive  
pre-production testing then please use the qlogin facility to get an  
interactive session.  
https://wiki.uiowa.edu/display/hpcdocs/Qlogin+for+Interactive+Sessions
```