

# TRABALHANDO COM GIT

## Introdução a Ciências da Computação

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Na aula passada, todos criamos uma conta em um VCS distribuído

- Provavelmente, no Github

Além disso, todos criaram seu repositório simbolizando o site pessoal

Por fim, acredito que a maioria tenha aplicado ao Github Education

# USO DO GIT NO TERMINAL

Vocês podem facilmente utilizar o Github no terminal

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
      [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
      [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
      [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
      [--super-prefix=<path>] [--config-env=<name>=<envvar>]
      <command> [<args>]
```

These are common Git commands used in various situations:

start a working area (see also: git help tutorial)

clone	Clone a repository into a new directory
init	Create an empty Git repository or reinitialize an existing one

work on the current change (see also: git help everyday)

add	Add file contents to the index
mv	Move or rename a file, a directory, or a symlink
restore	Restore working tree files
rm	Remove files from the working tree and from the index

examine the history and state (see also: git help revisions)

bisect	Use binary search to find the commit that introduced a bug
diff	Show changes between commits, commit and working tree, etc
grep	Print lines matching a pattern
log	Show commit logs
show	Show various types of objects
status	Show the working tree status

grow, mark and tweak your common history

branch	List, create, or delete branches
commit	Record changes to the repository
merge	Join two or more development histories together
rebase	Reapply commits on top of another base tip
reset	Reset current HEAD to the specified state
switch	Switch branches

# CONFIGURAÇÃO DO GIT

Inicialmente, a primeira coisa que você deve fazer é configurar seu nome de usuário e e-mail

- Também vamos facilitar a visualização do terminal

```
1 git config --global user.name "Meu nome"
```

Código: Configurar e-mail

```
1 git config --global user.email "user@unifal-mg.edu.br"
```

Código: Configurar e-mail

```
1 git config --global color.ui auto
```

Código: Colorir os comandos

# CONFIGURAÇÃO DO GIT - CRIANDO CHAVE GPG

O próximo passo é gerar a chave GPG no terminal

```
1 gpg --default-new-key-algo rsa4096 --gen-key
```

Código: Gerando a chave GPG

Neste comando, vocês deverão digitar

- ☐ Seu nome
- ☐ Seu e-mail cadastrado no Github
- ☐ Deverão criar uma senha

# CONFIGURAÇÃO DO GIT - CRIANDO CHAVE GPG

Ao fim, vocês deverão ter uma tela de sucesso parecida com esta

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ gpg --default-new-key-algo rsa4096 --gen-key
gpg (GnuPG) 2.2.27; Copyright (C) 2021 Free Software Foundation, Inc.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Note: Use "gpg --full-generate-key" for a full featured key generation dialog.

GnuPG needs to construct a user ID to identify your key.

Real name: Iago Augusto de Carvalho
Email address: iago.carvalho@unifal-mg.edu.br
You selected this USER-ID:
    "Iago Augusto de Carvalho <iago.carvalho@unifal-mg.edu.br>"

Change (N)ame, (E)mail, or (O)kay/(Q)uit? O
We need to generate a lot of random bytes. It is a good idea to perform
some other action (type on the keyboard, move the mouse, utilize the
disks) during the prime generation; this gives the random number
generator a better chance to gain enough entropy.
gpg: key 590E2451C43DEF19 marked as ultimately trusted
gpg: revocation certificate stored as '/home/iagoac/.gnupg/openpgp-revocs.d/01D31F25C15F9D60ECEC0641590E2451C43DEF19.rev'
public and secret key created and signed.

Note that this key cannot be used for encryption. You may want to use
the command "--edit-key" to generate a subkey for this purpose.
pub   rsa4096 2024-06-16 [SC] [expires: 2026-06-16]
       01D31F25C15F9D60ECEC0641590E2451C43DEF19
uid           Iago Augusto de Carvalho <iago.carvalho@unifal-mg.edu.br>

iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$
```

# CONFIGURAÇÃO DO GIT - CRIANDO CHAVE GPG

Podemos verificar se a chave foi corretamente criada

```
1  gpg --list-secret-keys --keyid-format=long
```

Código: Verificar as chaves criadas

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ gpg --list-secret-keys --keyid-format=long
/home/iagoac/.gnupg/pubring.kbx
-----
sec   rsa4096/590E2451C43DEF19 2024-06-16 [SC] [expires: 2026-06-16]
      01D31F25C15F9D60ECEC0641590E2451C43DEF19
uid   [ultimate] Iago Augusto de Carvalho <iago.carvalho@unifal-mg.edu.br>
```

# CONFIGURAÇÃO DO GIT - CRIANDO CHAVE GPG

Por fim, é necessário copiar o ID da chave GPG

Em meu exemplo, o ID da chave GPG é 590E2451C43DEF19

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ gpg --list-secret-keys --keyid-format=long  
/home/iagoac/.gnupg/pubring.kbx  
-----  
sec   rsa4096/590E2451C43DEF19 2024-06-16 [SC] [expires: 2026-06-16]  
      01D31F25C15F9D60EECEC0641590E2451C43DEF19  
uid           [ultimate] Iago Augusto de Carvalho <iago.carvalho@unifal-mg.edu.br>
```

Agora, ainda é necessário exportar esta chave criada

- Substituem o ID abaixo pelo ID que vocês copiaram anteriormente

```
1 gpg --armor --export 3AA5C34371567BD2
```

Código: Exportar a chave GPG



# CONFIGURAÇÃO DO GIT - CRIANDO CHAVE GPG

O comando anterior vai gerar uma saída similar a esta

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ gpg --armor --export 590E2451C43DEF19
-----BEGIN PGP PUBLIC KEY BLOCK-----

mQINBGZvPdGBEADppzTmvu3JDGnHBddcEuJzh11/tWX88MHA7wY4MyPxRoEMIRcQ
fMN8itB/MB2FiQbtHHXcnHqt2kguGVkJSHzxU9zXcMMcckrhP4kD3+1gqBSsn2jo
QE5x8a3gcrZJzraJYUel9fQQGP30nub1iRaGwMOWkkfWLR3S+p24CLKSrpA74wnC
gkIn9h4BJUVVnuyfzhv3FvnekdqbLIcR9dLoCdF28LxMrfBl12RLqoucufusvZu35
u4Yq5q7Fu3Yc60S3y3SbouM9E7dgDHYVVOGe7wLP5ec8lz885TQNTsEbEQNb0HWre
uco6qwF/Y5SnfB20CAzAJzwXSRuWV10Xj4J/dmCr7/uAahzw+tF84MyxsawocQSG
gItwE/YQIwBF/fLFL6gFi29NMdWRymzrylAg1fq/C/5yQMSpAVPxMlRSj9aiP4F0
3uV/saCuu4RjKpieGvwxCTWfR3ogVvvxLmMJo15Y02oLqyZ7JZ/j0sFhb3GYPAD
Pee5LM2rUgHNp+CodiU8cR0i3IaTTkty7FM559kD/Tm9NQ8i1sM5zy70s9l+vj
zPZCGrEe0H5YiEPPSQ+FQF5wtVQEQRBIeEZ60ke1AucK0V9xJeCX2LSMfDrS5SYE
CY3Cn7h5HUZK9kUnS Zomey9pI4jTp/1UeP3FgC8zBhbELbLFUCDZH69ECQARAQAB
tDLJYwvdiEF1Z3VzdG8gZGUgQ2FydMfSaG8gPGlhZ28uY2FydMfSaG9AdW5pZmFs
LW1nLmVkdS5icj6JALQEEwEKAD4WlQQB0x8lwV+dY0zsBkFZDiRRxD3vGQUCZm89
2AiBAwUJA8JnAAULCQGHAgYVCgkICwIEFgIDAQIeAQIXgAAKCRBZDiRRxD3vGaFw
D/901m4/fMyF2V3qh7AdXmC/P30w3kQLDVWxn4R37QgP7tMyGqrT0u7mCx9ML0mq
UURKFRMLNBqor5RbNmCTCYzkH6ZJFBL/ixnJ0KaRJJuDCPsdTzmqJqRD9IAXA9N2h1
Lxm/ZLJnt66ri3LONqGkBr4LkBCEnASwLkP4cSAiek+EzTpg2etPwGPI/I+92I8
gfVvytAFq9j0kzNBpz6D3q4/ekzL6jMbmOxCva0ULJuOL6yny+590FmhcvWJrGo+
/DlrduWso4PVg7KeZSP+K1xiD0Ky1MPFMnEE5gjn9EnX3NVceSHB2D4qd/O/momC
wH9daMEfVAIXhYroLC6LyZf8/SytQMxyDwyfwyhAybmSYwWP2K9BSj0st6xWsgBN
0fGU1pFj25FSI7VF0crBinULdxfhWYozx3mEdeJJFRKIOhu3H63fNlVP4sVZ8u93
viTWQ7cPeBbEBNz07nTOL3Jx4Gd977Hc9Kz4Pa5szNohKq6CSEe8bbqdfZ2pcr7
cqNN99/peUICxXnBgMJQy5mdVsmbkSLsr/+V9VbrHB2Pwn+ns/CvIjD5obCwQ0gS
AautuGxKhElpIdKL/kquidPnPyfgdR17E7BtGeLrtXMGJc0/rzZ3RiriMqlj5ry
LpuXZNQo+t1/jF1+TTzBiCJarK0hVFKFB8jRqQ0C2LSRA==
=qtx2
-----END PGP PUBLIC KEY BLOCK-----
```

# CONFIGURAÇÃO DO GIT - CRIANDO CHAVE GPG

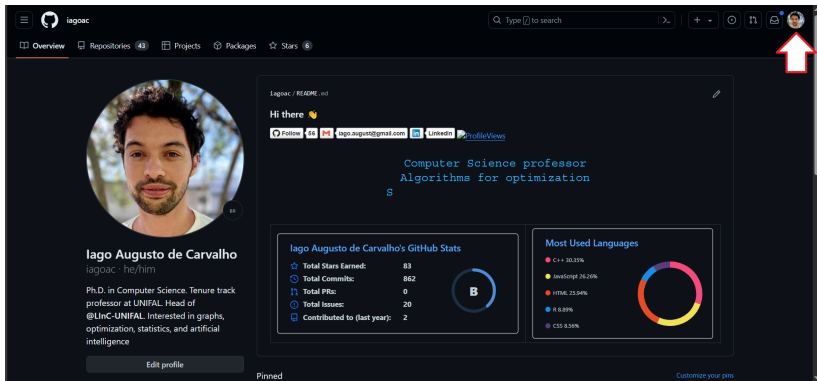
A chave gerada deverá ser copiada para ser incluída no Github

```
iaqoac@DESKTOP-47H27SC:~/github/iaqoac.github.io$ gpg --armor --export 590E2451C43DEF19
-----BEGIN PGP PUBLIC KEY BLOCK-----

mQINBGZvPdGBEADppzTmvu3JDGnHBddcEujzh11/tWX88MHA7wY4MyPxRoEMIRCq
fMN8itB/MB2FiQbtHHXcnHqt2kguGVkJSHzxU9zXcMMcckrhP4kD3+1gqBSsn2jo
QE5x8a3gcrZJzraJYUel9fQQGP30nub1iRaGwMOWkkfWLR3S+p24CLKSrpA74wnC
gkIn9h4BJUVVnuyfzhv3FvnekdqbLlCr9dLoCdF28LxMrfBl12RLqoucufusvZu35
u4Yq5q7Fu3Yc60S3SbouM9E7dgDHYVVOGe7wLP5ec8lz885TQNTSEbEQNb0HWre
uco6qwF/Y5SnfB20CAzAJzwXSRuWV10Xj4J/dmCr7/uAahzw+tF84MyxsawocQSG
gItwE/YQIWbF/fLl6GfI29NMdWRymzrylAg1fq/C/5yQMSPAPxMlRSj9aiP4F0
3uV/saCuu4RjKpieGvwxCTZtWfR3ogVvxxLmMJo15Y02oLqyZ7JZ/j0sFhb3GYPAD
Pee5LM2rUgHNp+CodiU8cR0i3IaTTkty7FM559kD/Tm9NQ8i1sM5zy70s9l+vj
zPZCGrEe0H5YiEPPSQ+FQF5wtVQEQRBIeEZ60ke1AucK0V9xJcX2lSMfDrS5SYE
CY3Cn7h5HUZK9kUnS Zomey9pI4jTp/1UeP3FgC8zBhbELbLFUCDZH69ECQARAQAB
tDlJYWdvIEF1Z3VzdG8gZGUGQ2FydMfSaG8gPGlhZ28uY2FydMfSaG9AdW5pZmFs
LW1nLmVkdS5icj6JAlQEEwEKAD4WlQQB0x8lwV+dYOzsBkFZDiRRxD3vGQUCZm89
2AIbAwUJA8JnAAULCQGHAgYVCgkICwIEFgIDAQIeAQIXgAAKCRBZDiRRxD3vGaFw
D/901m4/fMyF2V3qh7AdXmC/P30w3kQLDVWxn4R37QgP7tMyGqrT0u7mCx9ML0mq
UURKFRMLNBqor5RbNmCTCYzKh6ZJFBl/ixnJ0KaRJuDCPsdTzmqJqRD9IAXA9N2h1
LxM/ZLJnt66ri3LONqGkBr4LkBCEnASwLkP4cSAiek+EzTpg2etPwGPI/I+92I8
gfVvytAFq9j0kzNBpz6D3q4/ekzL6jMbmOx Cva0ULJu0L6yny+590FmhcvWJrGo+
/DlrduWso4PVg7KeZSP+K1xiD0Ky1MPFMnEE5gjn9EnX3NVceSHB2D4qd/O/momC
wH9daMEfVAIXhYroLC6LyZf8/SytQMxyDwyfwyhAybmSYwWP2K9BSj0st6xWsgbN
oFTGU1pFj25FSI7VF0crBinULdxfhWYozx3mEdeJJFRKIOhu3H63fNlVP4sVZ8u93
viFwQ7cPeBbEBNz07nTOL3Jdx4qGd977Hc9Kz4Pa5szNohKq6CSEe8bbqdfZ2pcr7
cqNN99/peUICxXnBgMQJy5mdVsmbkSlSr/+V9VbrHB2Pwn+ns/CvIjD5obCwQ0gS
AautuGxKhElpIdkl/kquipDnNPyfgdR17E7BtGelrtXMGJc0/rzZ3RiriMqlj5ry
LpuXZNQo+t1/jF1+TTzBiCJarK0hVFKFB8jRqQ0C2LSRA==
=qtx2
-----END PGP PUBLIC KEY BLOCK-----
```

# CONFIGURAÇÃO DO GIT - SINCRONIZANDO CHAVE GPG

Vamos inserir a chave criada no Github



The screenshot shows the GitHub profile page for user **iagoac**. The profile includes a circular profile picture of a man with curly hair and a beard. The bio states: "Ph.D. in Computer Science. Tenure track professor at UNIFAL. Head of @LinC-UNIFAL. Interested in graphs, optimization, statistics, and artificial intelligence". The page also displays GitHub statistics and a chart of most used languages.

**iago Augusto de Carvalho**  
iagoac · he/him

Ph.D. in Computer Science. Tenure track professor at UNIFAL. Head of @LinC-UNIFAL. Interested in graphs, optimization, statistics, and artificial intelligence

[Edit profile](#)

**iago Augusto de Carvalho's GitHub Stats**

Statistic	Value
Total Stars Earned	83
Total Commits	862
Total PRs	0
Total Issues	20
Contributed to (last year)	2

**Most Used Languages**

Language	Percentage
C++	30.33%
JavaScript	26.29%
HTML	23.04%
R	8.89%
CSS	8.56%

A red arrow points to the profile picture in the top right corner of the page.

# CONFIGURAÇÃO DO GIT - SINCRONIZANDO CHAVE GPG

Vamos inserir a chave criada no Github

The screenshot shows the GitHub profile page for user 'iagoac'. The profile includes a circular profile picture of a man with curly hair and a beard. Below the picture, the name 'iago Augusto de Carvalho' is displayed, along with the username 'iagoac' and the email 'he/nim'. A bio states: 'Ph.D. in Computer Science. Tenure track professor at UNIFAL. Head of @UInc-UNIFAL. Interested in graphs, optimization, statistics, and artificial intelligence'. A button 'Edit profile' is visible.

The 'README' section for the repository 'Lagoac' contains the following text:

```
Hi there 🐻
```

Below this, there are links for 'Follow', 'Email' (with the address 'iago.augusto@gmail.com'), 'LinkedIn', and 'Profile Views'.

The 'Lagoac / README' section lists the user's interests:

```
Computer Science professor
Algorithms for optimization
Statistics and machine learning
Decision sciences and OR
```

The 'Lago Augusto de Carvalho's GitHub Stats' section shows the following metrics:

- Total Stars Earned: 83
- Total Commits: 862
- Total PRs: 0
- Total Issues: 20
- Contributed to (last year): 2

A circular progress indicator with the letter 'B' is shown next to these stats.

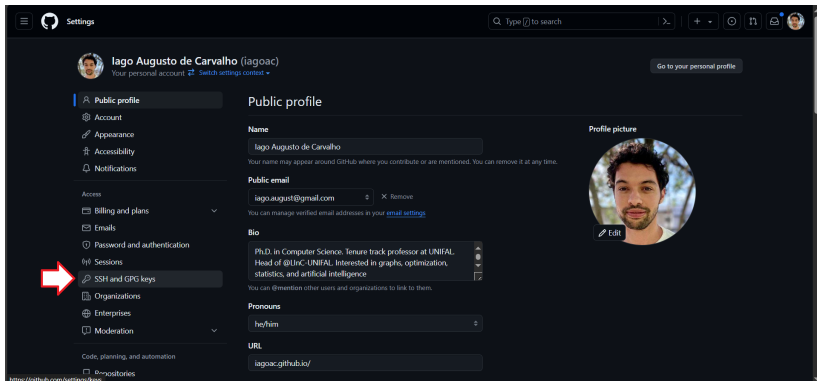
The 'Most Used Languages' section displays a bar chart with the following data:

- C++ 30.33%
- JavaScript 26.70%
- HTML 23.94%
- R 8.89%
- CSS 6.94%

The right sidebar shows the user's profile information, including the name 'iago Augusto de Carvalho' and a bio 'Doing some crazy scientific stuff'. It also lists various links and settings, such as 'Your profile', 'Add account', 'Your repositories', 'Your projects', 'Your Copilot', 'Your organizations', 'Your enterprises', 'Your stars', 'Your sponsors', 'Your gists', 'Upgrade', 'Try Enterprise', 'Feature preview', 'Settings', 'GitHub Support', 'GitHub Community', and 'Sign out'.

# CONFIGURAÇÃO DO GIT - SINCRONIZANDO CHAVE GPG

Vamos inserir a chave criada no Github



# CONFIGURAÇÃO DO GIT - SINCRONIZANDO CHAVE GPG

Vamos inserir a chave criada no Github

The screenshot shows the GitHub Settings page for the user 'iago Augusto de Carvalho (iagoac)'. The left sidebar contains a list of settings categories: Public profile, Account, Appearance, Accessibility, Notifications, Access, Billing and plans, Emails, Password and authentication, Sessions, SSH and GPG keys (highlighted), Organizations, Enterprises, Moderation, Code, planning, and automation, and Repositories. The main content area is divided into three sections: SSH keys, GPG keys, and Vigilant mode. The SSH keys section shows that there are no SSH keys associated with the account and provides a link to a guide on connecting to GitHub using SSH keys. The GPG keys section shows a list of GPG keys associated with the account, with a 'New GPG key' button highlighted by a red rectangle. The Vigilant mode section shows a checkbox for 'Flag unsigned commits as unverified'.

Settings

Search Type to search

Go to your personal profile

**Public profile**

**Account**

Appearance

Accessibility

Notifications

Access

Billing and plans

Emails

Password and authentication

Sessions

**SSH and GPG keys**

Organizations

Enterprises

Moderation

Code, planning, and automation

Repositories

### SSH keys

There are no SSH keys associated with your account.


Check out our guide to [connecting to GitHub using SSH keys](#) or [troubleshoot common SSH problems](#).

[New SSH key](#)

### GPG keys

This is a list of GPG keys associated with your account. Remove any keys that you do not recognize.

[New GPG key](#)

 **Email address:** iago.august@gmail.com  
**Key ID:** 8B8AC77F46E1E4C  
**Subkeys:** 1C9199D6AA4285FE  
Added on Jun 5, 2018

[Delete](#)

Learn how to [generate a GPG key and add it to your account](#).

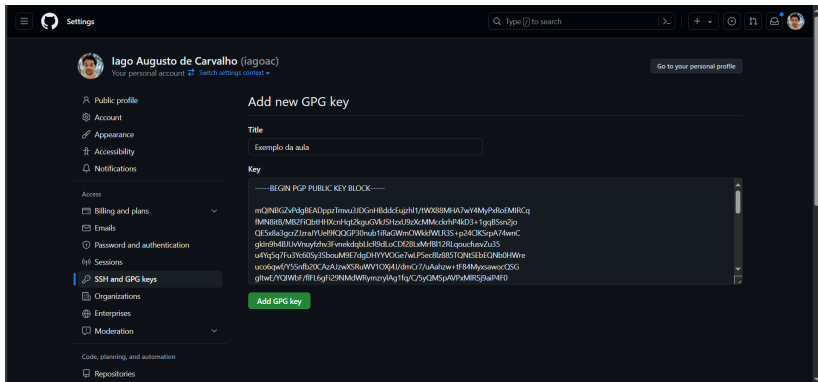
### Vigilant mode

☐ **Flag unsigned commits as unverified**

This will include any commit attributed to your account but not signed with your GPG or S/MIME key.

# CONFIGURAÇÃO DO GIT - SINCRONIZANDO CHAVE GPG

Vamos inserir a chave criada no Github



# CONFIGURAÇÃO DO GIT - SINCRONIZANDO CHAVE GPG

Vamos inserir a chave criada no Github

**Settings**

**iago Augusto de Carvalho (iagoac)**  
Your personal account. [Switch settings context](#)

[Public profile](#)  
[Account](#)  
[Appearance](#)  
[Accessibility](#)  
[Notifications](#)

**SSH and GPG keys**

**SSH keys** [New SSH key](#)

There are no SSH keys associated with your account.  
Check out our guide to [connecting to GitHub using SSH keys](#) or [troubleshoot common SSH problems](#).

**GPG keys** [New GPG key](#)

This is a list of GPG keys associated with your account. Remove any keys that you do not recognize.

**Exemplo da aula**  
Email address: iago.carvalho@unifal-mg.edu.br  
Key ID: 598E2451C43DEF19  
Added on Jun 16, 2024 [Delete](#)

**Email address: iago.august@gmail.com**  
Key ID: B8A8CA77F46E1E4C  
Subkeys: 1C919906AA4285FE  
Added on Jun 5, 2018 [Delete](#)

[Learn how to generate a GPG key and add it to your account.](#)



# UTILIZANDO GITHUB NO TERMINAL

Agora, (quase) temos livre acesso ao protocolo Git no terminal

- git clone
- git commit
- git push
- git pull

Além disso, (quase) podemos incluir ou remover arquivos

- git add
- git remove
- git mv

# UTILIZANDO GITHUB NO TERMINAL

O Github no terminal não suporta a utilização de senhas

- Devemos criar uma conexão segura

A maneira mais simples de fazer isto é utilizando conexões SSH

```
1 ssh-keygen -t ed25519 -C "user@sou.unifal-mg.edu.br"
```

```
iagoac@DESKTOP-47H27SC:~/github$ ssh-keygen -t ed25519 -C "user@sou.unifal-mg.edu.br"
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/iagoac/.ssh/id_ed25519):
Created directory '/home/iagoac/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/iagoac/.ssh/id_ed25519
Your public key has been saved in /home/iagoac/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:sAlj4xBEe3nFwLsPWDJEIGfH47gSKdLCV6zzT41kQcU iago.august@gmail.com
The key's randomart image is:
+--[ED25519 256]--+
|oB++o++|
|+ +++o.E|
|.oo+X.o..|
|*.o0+=o*|
|oo..+=.S|
|. . .oo .|
|. .oo|
|. .|
+-----[SHA256]-----+
```

# UTILIZANDO GITHUB NO TERMINAL

Vamos adicionar a chave gerada a configuração SSH de nosso computador

```
1 ssh-add ~/.ssh/id_ed25519
```

Código: Adicionando a chave gerada à configuração SSH

```
iagoac@DESKTOP-47H27SC:~/github$ ssh-add ~/.ssh/id_ed25519
Identity added: /home/iagoac/.ssh/id_ed25519 ([REDACTED]@gmail.com)
iagoac@DESKTOP-47H27SC:~/github$
```

# UTILIZANDO GITHUB NO TERMINAL

Por fim, vamos adicionar esta chave SSH gerada ao perfil do Github

```
1 cat ~/.ssh/id_ed25519.pub
```

Código: Obtendo a chave gerada

```
iagoac@DESKTOP-47H27SC:~/github$ cat ~/.ssh/id_ed25519.pub  
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIHajMr7v2h7x6SDEdYAwatfN1NirT8eJMPI7UVsbqLTO [redacted]@gmail.com
```

# UTILIZANDO GITHUB NO TERMINAL

The screenshot shows the GitHub profile of 'iagoac'. The profile includes a circular profile picture of a man with curly hair and a beard. Below the picture, the name 'iago Augusto de Carvalho' is displayed, along with the username 'iagoac · he/him'. A bio states: 'Ph.D. in Computer Science. Tenure track professor at UNIFAL. Head of @UnC-UNIFAL. Interested in graphs, optimization, statistics, and artificial intelligence'. There is an 'Edit profile' button below the bio.

The top navigation bar shows 'Overview', 'Repositories (43)', 'Projects', 'Packages', 'Stars (6)', and a search bar. A red arrow points to the user's profile picture in the top right corner.

The main content area shows a 'README.md' file with the following text:

```
Hi there 🙋  
  
Follow · 56 · Email · iago.augusto@gmail.com · LinkedIn · Profile Views  
  
Computer Science professor  
Algorithms for optimization  
S
```

Below the README, there are two statistics cards:

- iago Augusto de Carvalho's GitHub Stats**
  - Total Stars Earned: 83
  - Total Commits: 862
  - Total PRs: 0
  - Total Issues: 20
  - Contributed to (last year): 2
- Most Used Languages**
  - C++ 30.35%
  - JavaScript 26.26%
  - HTML 23.04%
  - R 8.89%
  - CSS 8.58%

At the bottom, there is a 'Pinned' section and a 'Customize your pins' link.

# UTILIZANDO GITHUB NO TERMINAL

The screenshot shows the GitHub profile of iagoac (iago Augusto de Carvalho). The profile includes a bio, a list of repositories, and a sidebar with navigation links. The main content area displays the user's bio, a list of repositories, and a section for GitHub stats and most used languages.

**Profile Information:**

- Name:** iago Augusto de Carvalho
- Username:** iagoac · he/him
- Bio:** Ph.D. in Computer Science. Tenure track professor at UNIFAL. Head of @LinC-UNIFAL. Interested in graphs, optimization, statistics, and artificial intelligence
- Location:** Brazil
- Website:** https://github.com/settings/profile

**Repositories:**

- Repository:** iagoac / README .md
- Hi there** 🙋
- Follow:** 56
- Email:** iago.augusto@gmail.com
- LinkedIn:** [Profile Views](#)

**GitHub Stats:**

- Total Stars Earned:** 83
- Total Commits:** 862
- Total PRs:** 0
- Total Issues:** 20
- Contributed to (last year):** 2

**Most Used Languages:**

- C++ 30.33%
- JavaScript 28.20%
- HTML 25.94%
- R 8.89%
- CSS 8.56%

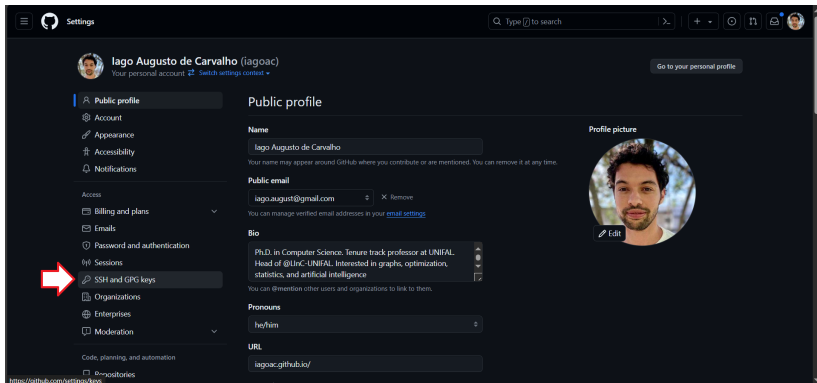
**Navigation Links:**

- Overview
- Repositories (43)
- Projects
- Packages
- Stars (6)

**Right Sidebar:**

- Doing some crazy scientific stuff
- Your profile
- Add account
- Your repositories
- Your projects
- Your Copilot
- Your organizations
- Your enterprises
- Your stars
- Your sponsors
- Your gists
- Upgrade
- Try Enterprise (Free)
- Feature preview
- Settings
- GitHub Support
- GitHub Community
- Sign out

# UTILIZANDO GITHUB NO TERMINAL



# UTILIZANDO GITHUB NO TERMINAL

The screenshot displays the GitHub user profile page for Iago Augusto de Carvalho (iagoac). The page is divided into a left sidebar, a top header, and a main content area. The sidebar contains links to various profile settings, with 'SSH and GPG keys' currently selected. The main content area is titled 'SSH keys' and 'GPG keys'. The 'SSH keys' section has a 'New SSH key' button highlighted with a red box. The 'GPG keys' section shows a single key added on Jun 5, 2018, with a 'Delete' button. The bottom section is titled 'Vigilant mode' and includes a checkbox for 'Flag unsigned commits as unverified'.

**SSH keys**

There are no SSH keys associated with your account.  
Check out our guide to [connecting to GitHub using SSH keys](#) or [troubleshoot common SSH problems](#).

**GPG keys**

This is a list of GPG keys associated with your account. Remove any keys that you do not recognize.

**Key details:**

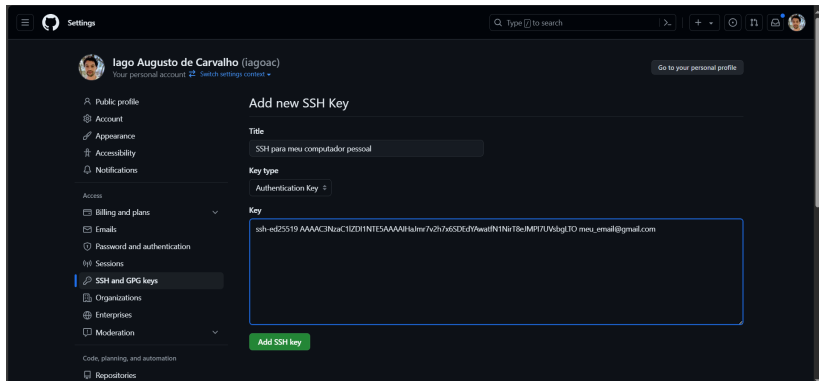
- Email address: iago.august@gmail.com
- Key ID: BB8BCA77E46E3E4C
- Subkeys: 1C919906AA4285FE
- Added on Jun 5, 2018

**Vigilant mode**

☐ **Flag unsigned commits as unverified**  
This will include any commit attributed to your account but not signed with your GPG or S/MIME key.



# UTILIZANDO GITHUB NO TERMINAL



# UTILIZANDO GITHUB NO TERMINAL

Settings

ago Augusto de Carvalho (iagoac)  
Your personal account [Switch settings context](#)

Go to your personal profile

Public profile  
Account  
Appearance  
Accessibility  
Notifications

Access  
Billing and plans  
Emails  
Password and authentication  
Sessions  
**SSH and GPG keys**  
Organizations  
Enterprises  
Moderation


Code, planning, and automation  
Repositories

## SSH keys

New SSH key

This is a list of SSH keys associated with your account. Remove any keys that you do not recognize.

### Authentication keys


 **SSH para meu computador pessoal**  
SHA256:saLj4a8Ea3nfel.sPmDJE6FH7gSKdLCV6z2741UQzU  
Added on Jun 16, 2024  
Never used — Read/write [Delete](#)

Check out our guide to [connecting to GitHub using SSH keys](#) or [troubleshoot common SSH problems](#).

## GPG keys

New GPG key

This is a list of GPG keys associated with your account. Remove any keys that you do not recognize.

 **Email address: iago.august@gmail.com**  
Key ID: B8ABC77F46E3E4C  
Subkeys: 1C919906AAA285FE  
Added on Jun 5, 2018 [Delete](#)

# CLONANDO UM REPOSITÓRIO

The screenshot shows the GitHub interface for the repository 'iagoac/M-SPA'. The repository is public and has 1 branch and 0 tags. The 'Code' dropdown menu is open, showing options to clone the repository via HTTPS, SSH, or GitHub CLI. A message indicates that no public SSH keys are present in the user's GitHub account, suggesting the use of HTTPS or a public key. The repository description states: 'Source-code, instances, and results of the paper "A fix-and-optimize heuristic for the minmax regret shortest path arborescence problem under interval uncertainty"'. The README section is partially visible, showing the title 'M-SPA' and the license 'GPL-3.0 license'.

https://github.com/iagoac/M-SPA#

# CLONANDO UM REPOSITÓRIO

Caso o repositório já esteja clonado, pode-se verificar se ele usa o protocolo SSH ou HTTPS

```
1 git remote -v
```

Código: Verificando o repositório já clonado

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git remote -v
origin  https://github.com/iagoac/iagoac.github.io.git (fetch)
origin  https://github.com/iagoac/iagoac.github.io.git (push)
```

```
1 git remote set-url origin git@github.com:iagoac/iagoac
  .github.io.git
```

Código: Mudando para a conexão SSH

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git remote -v
origin  git@github.com:iagoac/iagoac.github.io.git (fetch)
origin  git@github.com:iagoac/iagoac.github.io.git (push)
```

# GIT STATUS

```
1 git status
```

Código: Verifica os arquivos modificados

```
iagoac@DESKTOP-47H275C:~/github/iagoac.github.io$ ls
README.md about.html assets contact.html index.html me.jpg publications.html research.html sitemap.sm teaching.html
iagoac@DESKTOP-47H275C:~/github/iagoac.github.io$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   about.html
        modified:   contact.html
        modified:   index.html
        modified:   publications.html
        modified:   research.html
        modified:   sitemap.sm
        modified:   teaching.html

no changes added to commit (use "git add" and/or "git commit -a")
```

# GIT ADD

```
1 git add <arquivos>
```

Código: Adiciona arquivos para um commit

Neste exemplo, eu vou adicionar somente o *sitemap.sm*

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git add sitemap.sm
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   sitemap.sm

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   about.html
        modified:   contact.html
        modified:   index.html
        modified:   publications.html
        modified:   research.html
        modified:   teaching.html
```

# GIT COMMIT

```
1 git commit -m "Mensagem"
```

Código: Faz o commit das mudanças

O parâmetro *-m* indica a mensagem do *commit*

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git commit -m "feat: incluindo nova página software"
[master b911023] feat: incluindo nova página software
1 file changed, 7 insertions(+), 6 deletions(-)
```

# GIT PUSH

```
1 git push
```

Código: Envia as mudanças para o VCS

```
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 355 bytes | 23.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: GitHub found 3 vulnerabilities on iagoac/iagoac.github.io's default branch (3 moderate). To find out more, visit:
remote:   https://github.com/iagoac/iagoac.github.io/security/dependabot
remote:
To github.com:iagoac/iagoac.github.io.git
   c9a4d7a..b911023  master -> master
iagoac@DESKTOP-47H27SC:~/github/iagoac.github.io$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   about.html
        modified:   contact.html
        modified:   index.html
        modified:   publications.html
        modified:   research.html
        modified:   teaching.html

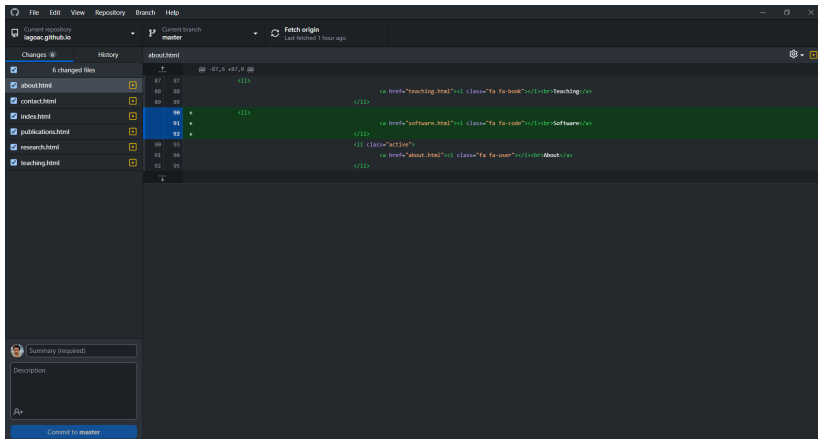
no changes added to commit (use "git add" and/or "git commit -a")
```



O protocolo Git é muito maior do que o que foi passado nesta disciplina

- Outros comandos Git
- Git Cheat Sheet

# OUTRAS MANEIRAS DE USAR GIT



# OUTRAS MANEIRAS DE USAR GIT

