Software: Git and Github

This guide provides instructions for setting up **Git** and **GitHub Desktop**.

Version control is essential for managing code changes and collaborating with others. For the **CEE6501** course, I will be uploading example files, lecture materials, and interactive Jupyter notebooks to a GitHub repository.

Repo Link: https://github.com/Bruun-Automation-Research-Lab/CEE6501

The lectures are designed to be hands-on, and you'll be expected to follow along using the provided notebooks. To do this effectively, you'll need a basic working understanding of the Git workflow we will be using in this course.

Learning Objectives

By the end of this guide, you will:

- Installing Git and Github Desktop
- Making a GitHub Account
- Cloning the course repository
- Pulling updates as new content is added

🔧 Set Up Git

Windows

- Visit the Git download page: `https://git-scm.com/downloads`
- Download the `.exe` installer and run it
- Follow the on-screen instructions, accepting default options
- **Important**: Select "*Git from the command line and also from 3rd-party software*" during setup

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macOS

Open the Terminal and run the following:

```
# Install Homebrew if not already installed
/bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

# Install Git
brew install git

# Verify Git is installed
git --version
```

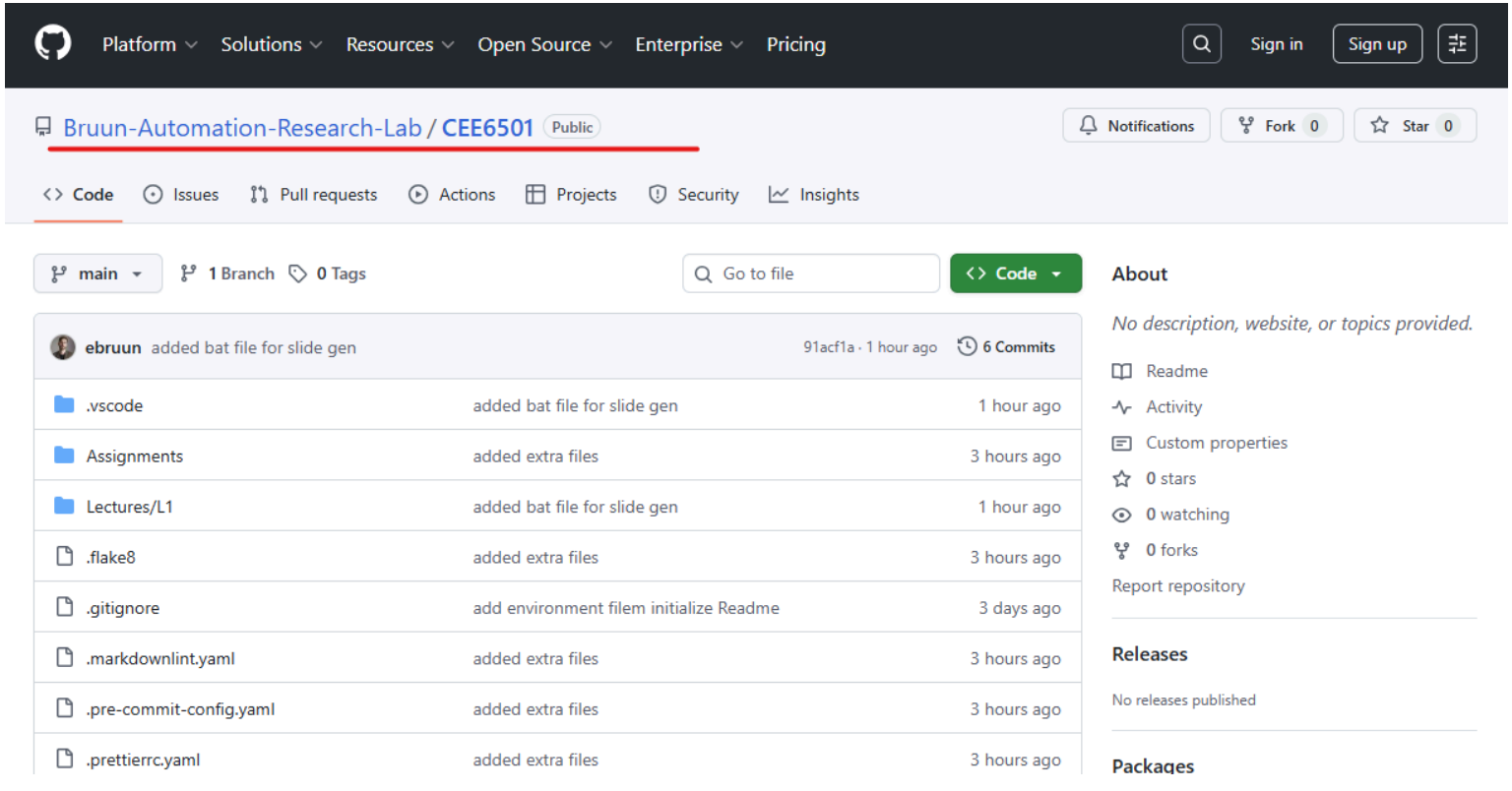
Set Up GitHub

Make a Github Account

1. Go to https://github.com : `https://github.com`
2. Click **Sign up** and follow the steps to create a free account
3. You can use any email, but if you use your GT email as you can later apply for a few educational upgrade if you choose to
4. Once your account is created, verify your email address

Access Course Repo

Find course repo: https://github.com/Bruun-Automation-Research-Lab/CEE6501



🔧 Set Up Github Desktop

Install GitHub Desktop

- Visit the GitHub Desktop download page : `https://desktop.github.com`
- Download the installer for your OS
- Install it like any other application:
    - **Windows**: `.exe` file
    - **macOS**: `.dmg` file

Configure GitHub Desktop

1. **Sign in to GitHub**
   Launch GitHub Desktop and sign in with your GitHub account.

2. **Set Integrations**
   Choose your preferred editor (e.g., VS Code) and shell (e.g., Git Bash or Terminal).

3. **Git Configuration**
   Ensure your username and email are set correctly under *File* > *Options* > *Git*. These are stored globally in `.gitconfig`.

Clone a Repository to your Local Machine

1. Go to **File > Clone Repository**
2. Under the **URL** tab, select the course repo URL

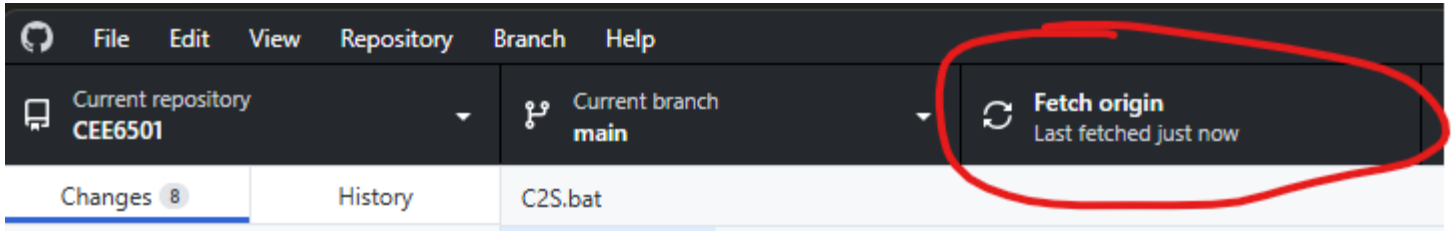
```
https://github.com/Bruun-Automation-Research-Lab/CEE6501
```

3. Select where you want the repo to be saved on your local machine. I suggest making a folder called Github under Documents and saving all repos there.

```
Note: You only need to do this once per repository.
```

Fetching and Pulling Updates to the Repo

1. Click **Fetch** to check if any changes have been made to the remote repository
2. If changes exist, click **Pull** to download the latest updates into your local copy



Note: You should **fetch** and **pull** every time you start working to make sure you have the latest files pulled to your local folder.

3. **Push** is used to upload your own changes — but for this course, updates will be **one-way only**
    - You will **not** be contributing to the shared repo
    - It is used solely to distribute updated course materials and lecture notebooks
    - ⚠️ **IMPORTANT:** If you make changes to any of the Jupyter notebooks (e.g., adding notes, solving exercises),
      make sure to **save your edited copies in a different folder**
      — **any changes made in the cloned repo folder will be overwritten** when you pull updates

What's Next

Now that you have Git and GitHub set up and can clone the course repository, you're ready to focus on running and modifying code locally. In the next tutorial, we'll install Python and Conda, which will give you a reliable and reproducible environment for executing the course notebooks and scripts.