

SpotFinder Project Setup Guide

This document provides step-by-step instructions to set up the SpotFinder project. Follow these steps to ensure a smooth installation and setup process.

Step 1: Install Anaconda

Anaconda is a distribution of Python and R for scientific computing and data science. It includes a package manager called conda.

1. Download Anaconda from the official website: <https://www.anaconda.com/products/distribution>
2. Follow the installation instructions for your operating system.

Step 2: Ensure You Have a GPU

The SpotFinder project requires a GPU to run efficiently. Ensure your machine has a compatible GPU.

1. Check your system specifications to confirm the presence of a GPU.
2. Ensure that the GPU drivers are up-to-date.

Step 3: Install CUDA 11.8

CUDA is a parallel computing platform and application programming interface (API) model created by Nvidia.

1. Download CUDA 11.8 from the official Nvidia website:
<https://developer.nvidia.com/cuda-11.8.0-download-archive>
2. Follow the installation instructions for your operating system.

Step 4: Install PyTorch

PyTorch is an open-source machine learning library based on the Torch library.

1. Open Anaconda Prompt (or your preferred terminal if you have Anaconda installed).

2. Run the following command to install PyTorch with CUDA 11.8 support:

```
conda install pytorch torchvision torchaudio pytorch-cuda=11.8 -c pytorch -c nvidia
```

Step 5: Install Project Requirements

The SpotFinder project requires several Python packages. Install them using pip:

1. Create and activate a new conda environment (optional but recommended):

```
conda create --name spotfinder python=3.8
```

```
conda activate spotfinder
```

2. Install the required packages:

```
pip install ultralytics==8.2.72 youtube-dl==2021.12.17 yt-dlp==2024.7.2 pafy==0.5.5
```

```
opencv-python==4.10.0.84
```

Step 6: Navigate to the Project Folder

1. Open CMD (Command Prompt).

2. Navigate to the main folder of the SpotFinder project using the cd command. For example:

```
cd path\to\spot-finder
```

Step 7: Run the SpotFinder Project

1. Ensure you are in the main folder of the project.

2. Run the main script:

```
python main.py
```

Follow these steps to set up and run the SpotFinder project. If you encounter any issues, ensure all dependencies are correctly installed and your GPU drivers are up-to-date.