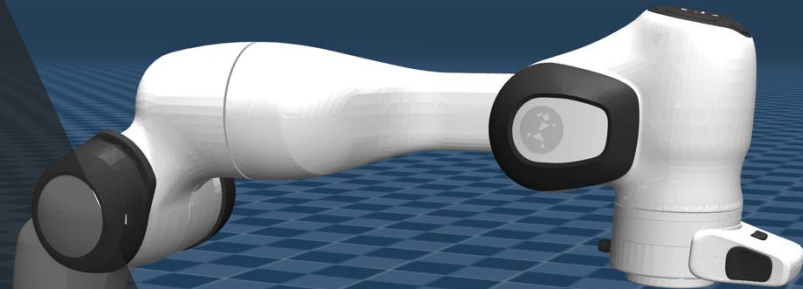


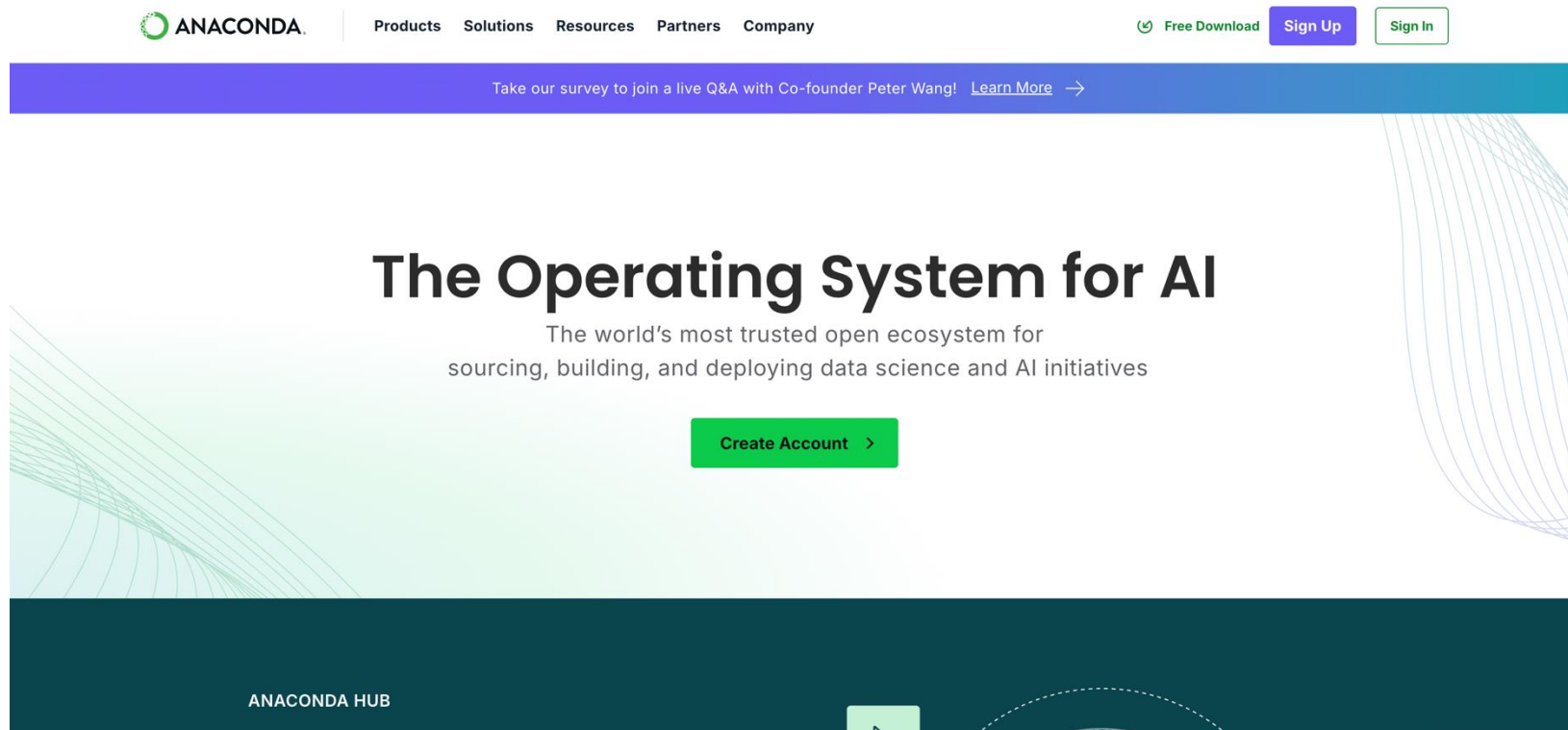
Convergent Robotics Technology

Install MuJoCo



Conda Installation

- AnaConda: <https://www.anaconda.com/>



The screenshot shows the Anaconda website homepage. At the top, there is a navigation bar with the Anaconda logo on the left, followed by links for Products, Solutions, Resources, Partners, and Company. On the right side of the navigation bar, there are three buttons: 'Free Download' with a download icon, 'Sign Up', and 'Sign In'. Below the navigation bar is a blue banner with the text 'Take our survey to join a live Q&A with Co-founder Peter Wang!' and a 'Learn More' link with a right arrow. The main content area features the heading 'The Operating System for AI' in large, bold, black font. Below this heading is a subheading: 'The world's most trusted open ecosystem for sourcing, building, and deploying data science and AI initiatives'. A green 'Create Account >' button is centered below the subheading. The background of the main content area has abstract green and blue wavy lines. At the bottom, there is a dark teal footer with the text 'ANACONDA HUB' on the left. On the right side of the footer, there is a small green button with a white arrow pointing right, and a circular graphic with a dashed line.

ANACONDA

Products Solutions Resources Partners Company

Free Download Sign Up Sign In

Take our survey to join a live Q&A with Co-founder Peter Wang! [Learn More](#) →

The Operating System for AI

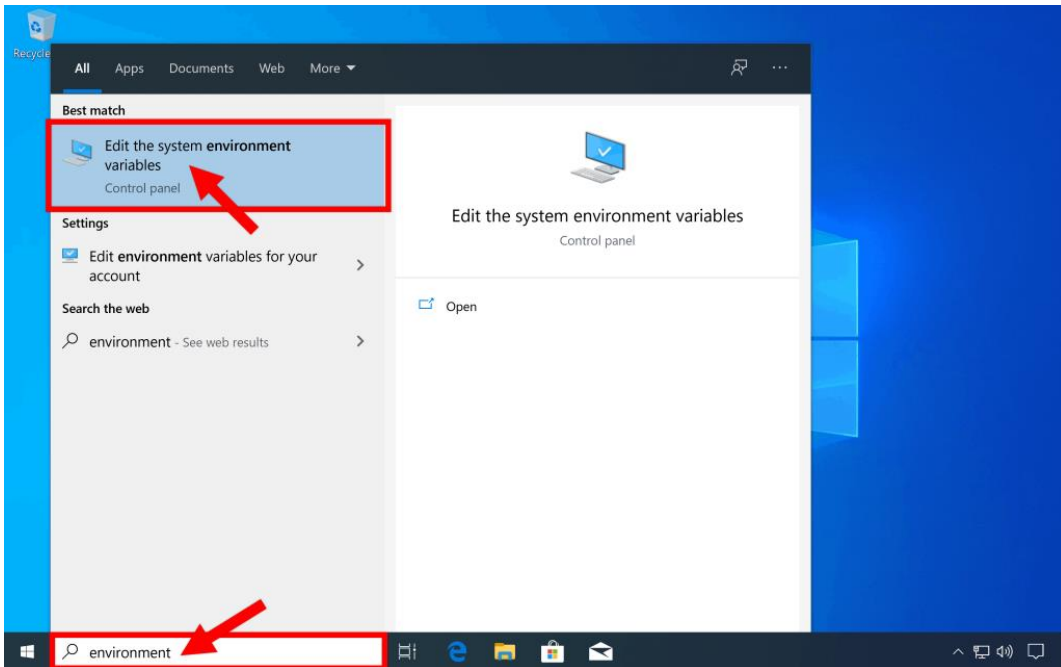
The world's most trusted open ecosystem for sourcing, building, and deploying data science and AI initiatives

Create Account >

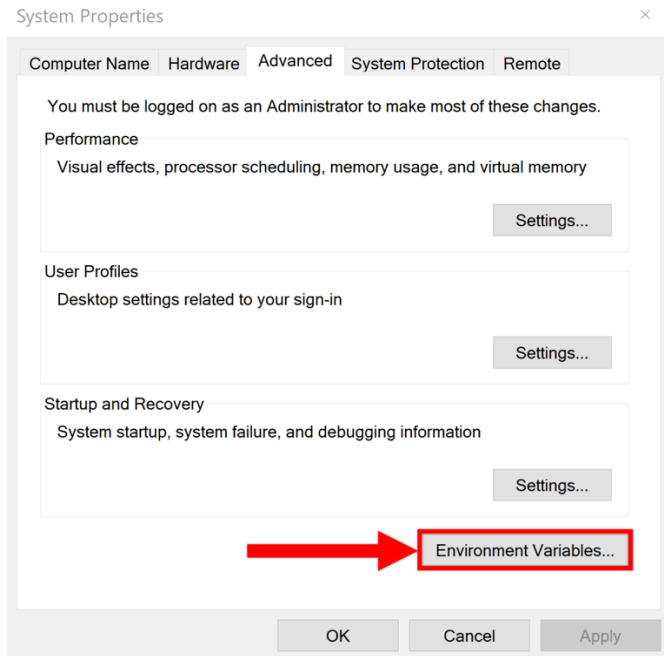
ANACONDA HUB

Conda Installation

- Add Conda installation directory to your PATH variables (WIN)

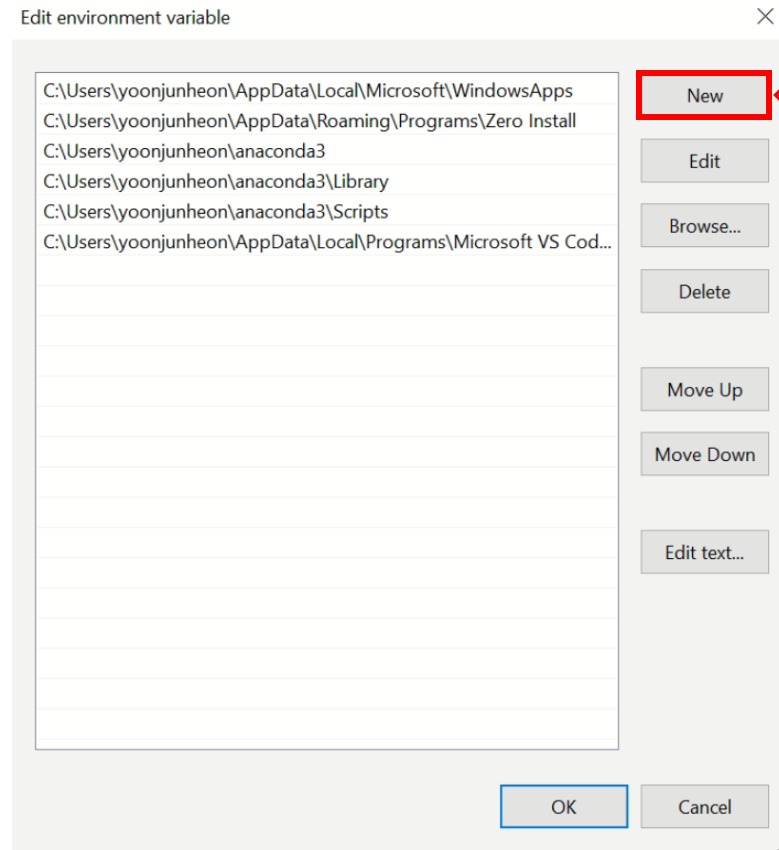
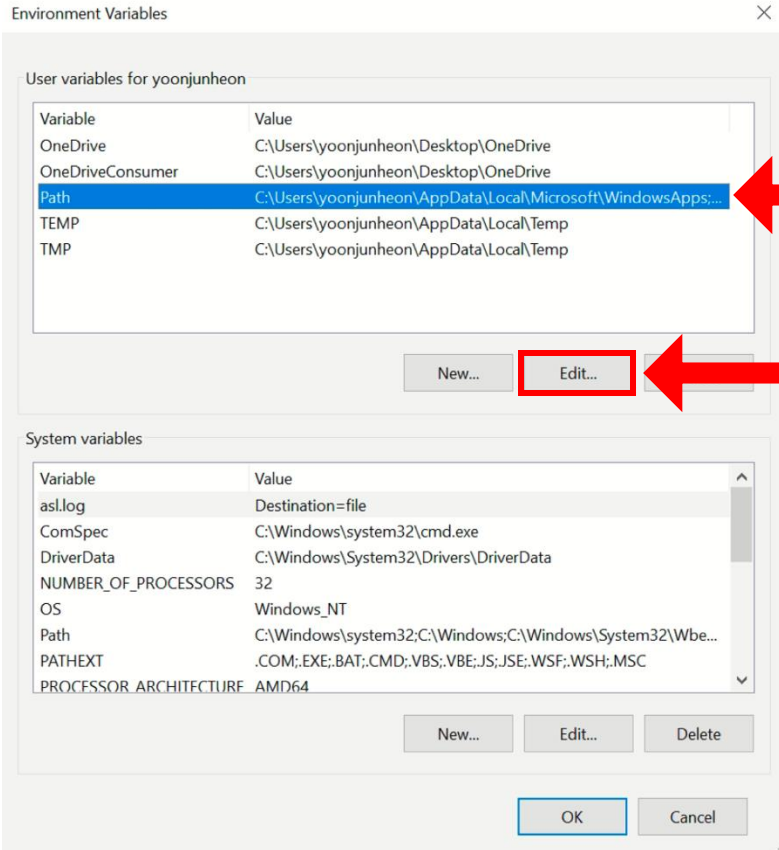


Enter “Environment variables(환경변수)”



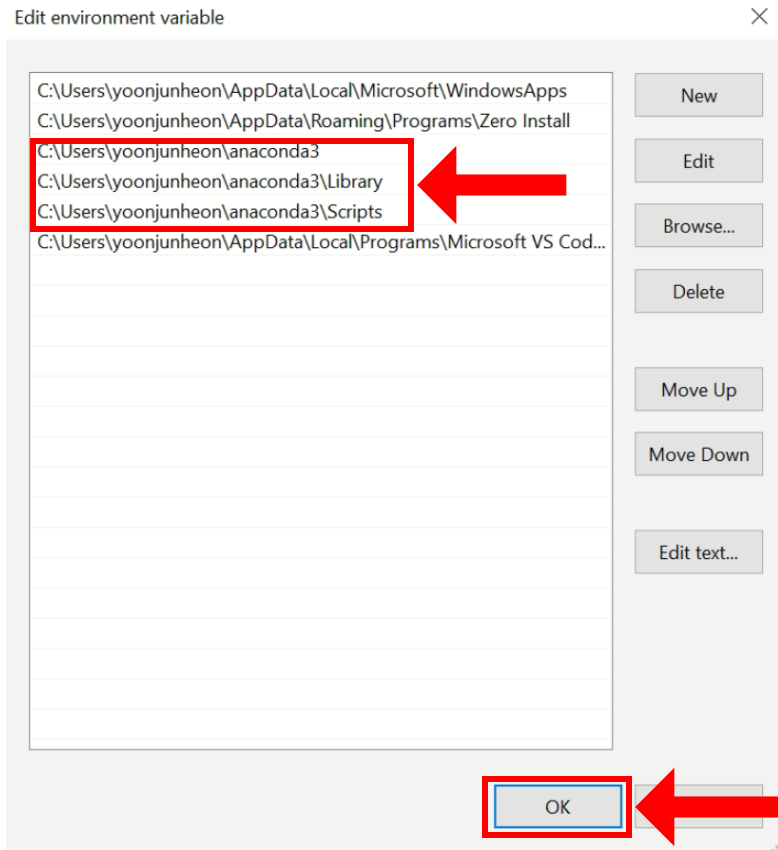
Conda Installation

- Add Conda installation directory to your PATH variables (WIN)



Conda Installation

- Add Conda installation directory to your PATH variables (WIN)



Add your anaconda PATH

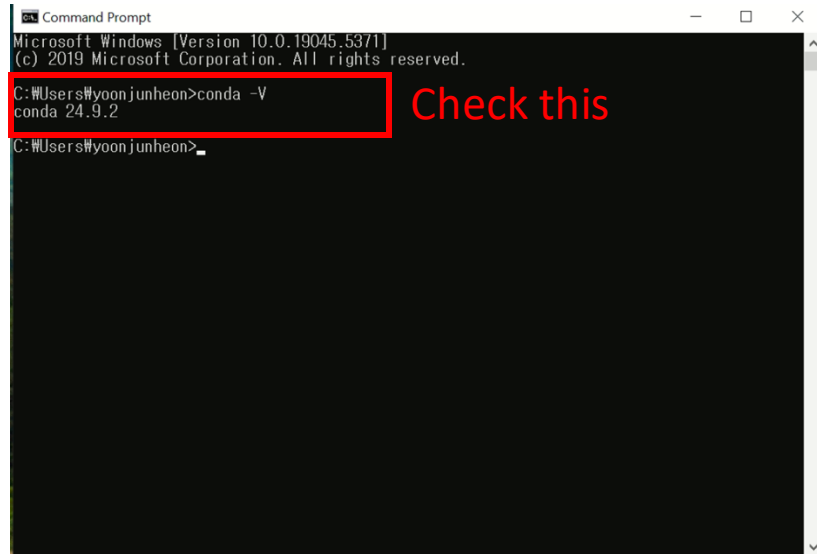
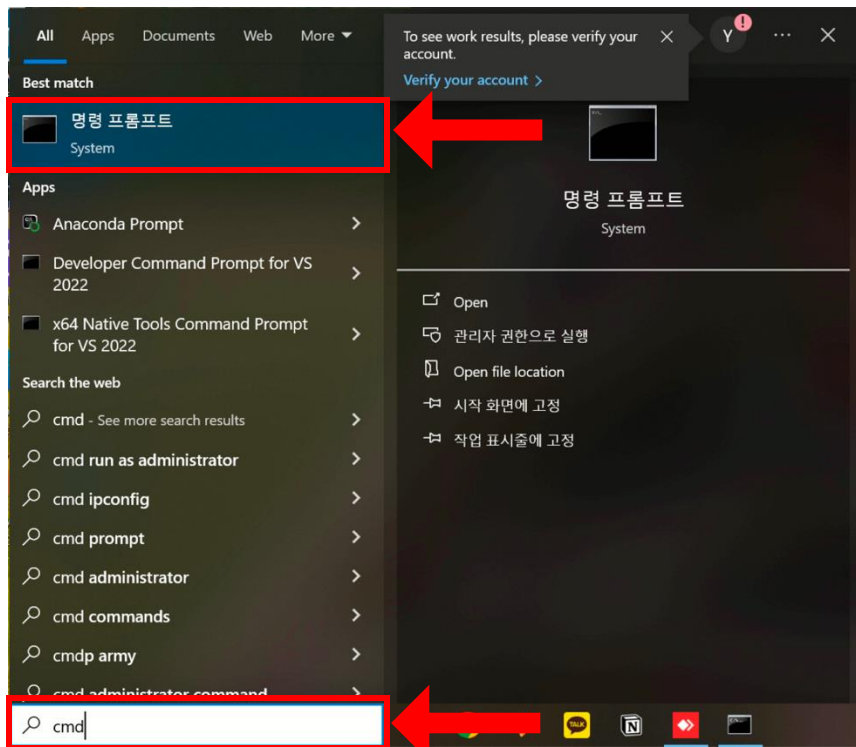
- /path/to/anaconda3
- /path/to/anaconda3/Library
- /path/to/anaconda3/Scripts



Enter your installation path (p.5)

Conda Installation

- Add Conda installation directory to your PATH variables (WIN)



Conda Installation

- Add Conda installation directory to your PATH variables

Initialize conda env.

Re-open CMD/terminal.

```
C:\Users\yoonjunheon>conda init
no change C:\Users\yoonjunheon\anaconda3\Scripts\conda.exe
no change C:\Users\yoonjunheon\anaconda3\Scripts\conda-env.exe
no change C:\Users\yoonjunheon\anaconda3\Scripts\conda-script.py
no change C:\Users\yoonjunheon\anaconda3\Scripts\conda-env-script.py
no change C:\Users\yoonjunheon\anaconda3\condabin\conda.bat
no change C:\Users\yoonjunheon\anaconda3\Library\bin\conda.bat
no change C:\Users\yoonjunheon\anaconda3\condabin\conda_activate.bat
no change C:\Users\yoonjunheon\anaconda3\condabin\conda_rename_tmp.bat
no change C:\Users\yoonjunheon\anaconda3\condabin\conda_auto_activate.bat
no change C:\Users\yoonjunheon\anaconda3\condabin\conda_hook.bat
no change C:\Users\yoonjunheon\anaconda3\Scripts\activate.bat
no change C:\Users\yoonjunheon\anaconda3\condabin\activate.bat
no change C:\Users\yoonjunheon\anaconda3\condabin\deactivate.bat
modified C:\Users\yoonjunheon\anaconda3\Scripts\activate
modified C:\Users\yoonjunheon\anaconda3\Scripts\deactivate
modified C:\Users\yoonjunheon\anaconda3\etc\profile.d\conda.sh
modified C:\Users\yoonjunheon\anaconda3\etc\fish\conf.d\conda.fish
no change C:\Users\yoonjunheon\anaconda3\shell\condabin\Conda.psm1
modified C:\Users\yoonjunheon\anaconda3\shell\condabin\conda-hook.ps1
no change C:\Users\yoonjunheon\anaconda3\Lib\site-packages\xontrib\conda.xsh
modified C:\Users\yoonjunheon\anaconda3\etc\profile.d\conda.csh
no change C:\Users\yoonjunheon\Documents\WindowsPowerShell\profile.ps1
modified HKEY_CURRENT_USER\Software\Microsoft\Command Processor\AutoRun

==> For changes to take effect, close and re-open your current shell. <==
```

MuJoCo & Pinocchio Installation

- Create Conda environment

Create Conda environment by entering:
\$ conda create -n cRobotics python=3.10

```
Microsoft Windows [Version 10.0.19045.5371]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
C:\Users\yoonjunheon>conda create -n cRobotics python=3.10
```

After create the environment,
activate **cRobotics** environment:
\$ conda activate cRobotics

```
Microsoft Windows [Version 10.0.19045.5371]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
C:\Users\yoonjunheon>conda activate cRobotics  
(cRobotics) C:\Users\yoonjunheon>
```

Check this

MuJoCo & Pinocchio Installation

- Install MuJoCo & Pinocchio

Install MuJoCo by entering:

\$ conda install conda-forge::mujoco-python

```
(cRobotics) C:\Users#yoonjunheon>conda install conda-forge::mujoco-python_
```

Make sure this is activated!

Install Pinocchio by entering:

\$ conda install pinocchio -c conda-forge

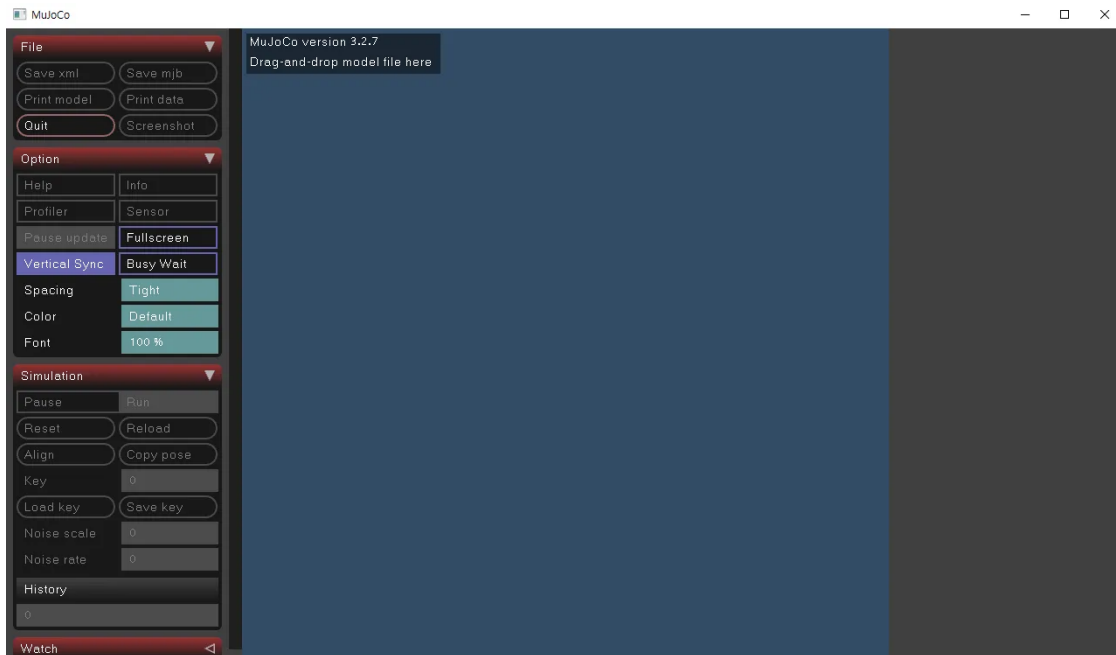
```
(cRobotics) C:\Users#yoonjunheon>conda install pinocchio -c conda-forge_
```

Make sure this is activated!

MuJoCo & Pinocchio Installation

- Install MuJoCo & Pinocchio

After install MuJoCo successfully,
you can execute MuJoCo by:
\$ python -m mujoco.viewer



Cmake Installation (WIN)

- Cmake: <https://cmake.org/download/>

Latest Release (3.31.5)

The release was packaged with CPack which is included as part of the release. The .sh files are self extracting gzipped tar files. To install a .sh file, run it with /bin/sh and follow the directions. The OS-machine.tar.gz files are gzipped tar files of the install tree. The OS-machine.tar.Z files are compressed tar files of the install tree. The tar file distributions can be untared in any directory. They are prefixed by the version of CMake. For example, the linux-x86_64 tar file is all under the directory cmake-linux-x86_64. This prefix can be removed as long as the share, bin, man and doc directories are moved relative to each other. To build the source distributions, unpack them with zip or tar and follow the instructions in README.rst at the top of the source tree. See also the [CMake 3.31 Release Notes](#).

Source distributions:

Platform	Files
Unix/Linux Source (has \n line feeds)	cmake-3.31.5.tar.gz
Windows Source (has \r\n line feeds)	cmake-3.31.5.zip

Binary distributions:

Platform	Files
Windows x64 Installer:	cmake-3.31.5-windows-x86_64.msi
Windows x64 ZIP	cmake-3.31.5-windows-x86_64.zip
Windows i386 Installer:	cmake-3.31.5-windows-i386.msi
Windows i386 ZIP	cmake-3.31.5-windows-i386.zip
Windows ARM64 Installer:	cmake-3.31.5-windows-arm64.msi
Windows ARM64 ZIP	cmake-3.31.5-windows-arm64.zip
macOS 10.13 or later	cmake-3.31.5-macos-universal.dmg

- Latest Release
- Previous Release
- Alternative Binary Releases
- Older Releases
- Editor Syntax Files
- Current Development Distribution

CMake Resources

Whether you are just getting started or are already part of the CMake community, check out our helpful resources page.

RESOURCES



Visual Studio Installation (WIN)

- mysnu -> SW 다운로드 -> Microsoft Visual Studio

Visual Studio 제품군을 만나보세요



Visual Studio | Windows

Windows에서 .NET 및 C++ 개발자를 위한 가장 포괄적인 IDE입니다. 소프트웨어 개발의 모든 단계를 향상시키고 개선할 수 있는 다양한 도구와 기능이 완벽하게 포함되어 있습니다.

자세히 보기 →

Visual Studio 다운로드 ▾

Community 2022

Professional 2022

Enterprise 2022

고 싶으신가요? 저희가 도와드릴게요.



Visual Studio for Mac | macOS

macOS에 기본 제공되는 .NET 개발자를 위한 포괄적인 IDE입니다. 웹, 클라우드, 모바일 및 게임 개발을 위한 최고 수준의 지원을 포함합니다.

자세히 보기 →

다음에 대해 자세히 알아보기 라이선스 활성화

Visual Studio for Mac 다운로드



Visual Studio Code | Windows, macOS, Linux

Windows, macOS 및 Linux에서 실행되는 독립 실행형 소스 코드 편집기입니다. JavaScript 및 웹 개발자를 위한 최고의 선택이며, 거의 모든 프로그래밍 언어를 지원할 수 있는 확장 기능을 제공합니다.

자세히 보기 →

Visual Studio Code를 사용하면 다음에 동의하는 것입니다. 라이선스 & 개인정보 처리방침

Visual Studio 코드 다운로드 ▾



Visual Studio Installation (WIN)

• Install with C++ & Python

수정 — Visual Studio Community 2022 (2) — 17.5.1

워크로드 개별 구성 요소 언어 팩 설치 위치



Python 개발

Python에 대한 편집, 디버깅, 대화형 개발 및 소스 제어입니다.



JavaScript 개발

비동기 이벤트 구동 JavaScript 런타임인 Node.js를 사용하여 확장 가능한 네트워크 애플리케이션을 빌드합니다.



데스크톱 및 모바일 (5)



.NET Multi-Platform App UI 개발

.NET MAUI와 함께 C#을 사용하여 단일 코드베이스에서 Android, iOS, Windows 및 Mac용 앱을 빌드합니다.



.NET 데스크톱 개발

.NET 및 .NET Framework와 함께 C#, Visual Basic 및 F#를 사용하여 WPF, Windows Forms 및 콘솔 애플리케이션을...



C++를 사용한 데스크톱 개발

MSVC, Clang, CMake 또는 MSBuild 등 선택한 도구를 사용하여 Windows용 최신 C++ 앱을 빌드합니다.



Windows 플랫폼 개발

C#, VB 또는 C++(선택 사항)를 사용하여 유니버설 Windows 플랫폼용 애플리케이션을 만듭니다.



C++를 사용한 모바일 개발

C++를 사용하여 iOS, Android 또는 Windows용 플랫폼 간 애플리케이션을 빌드합니다.



설치 세부 정보

▶ Visual Studio 핵심 편집기

▼ C++를 사용한 데스크톱 개발

▼ 포함됨

✓ C++ 핵심 데스크톱 기능

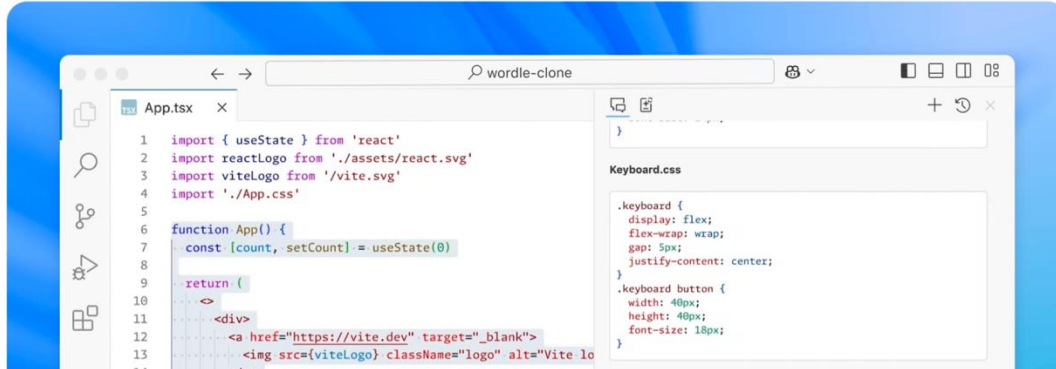
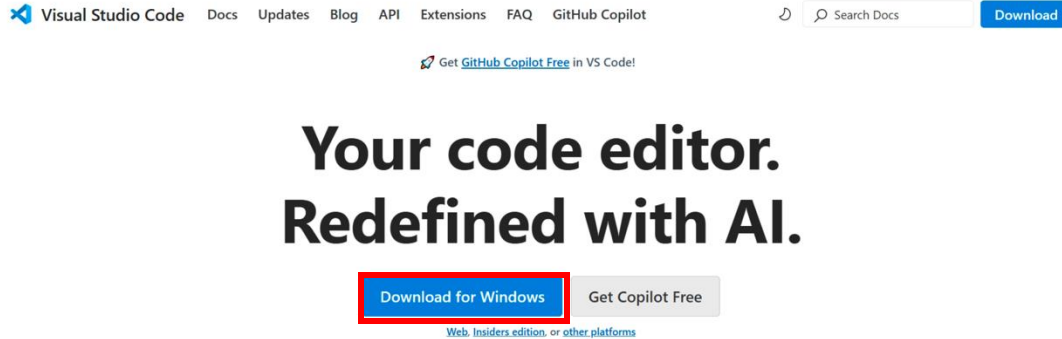
▼ 선택 사항

- ☒ MSVC v143 - VS 2022 C++ x64/x86 빌드...
- ☒ 최신 v143 빌드 도구용 C++ ATL(x86 및 x64)
- ☒ Windows 11 SDK(10.0.22000.0)
- ☒ 보안 문제 분석
- ☒ Just-In-Time 디버거
- ☒ C++ 프로파일링 도구
- ☒ Windows용 C++ CMake 도구
- ☒ Test Adapter for Boost.Test
- ☒ Test Adapter for Google Test
- ☒ Live Share
- ☒ IntelliCode
- ☒ C++ AddressSanitizer
- ☐ 최신 v143 빌드 도구용 C++ MFC(x86 및 x64)
- ☐ v143 빌드 도구용 C++ 모듈(x64/x86 - 실험)



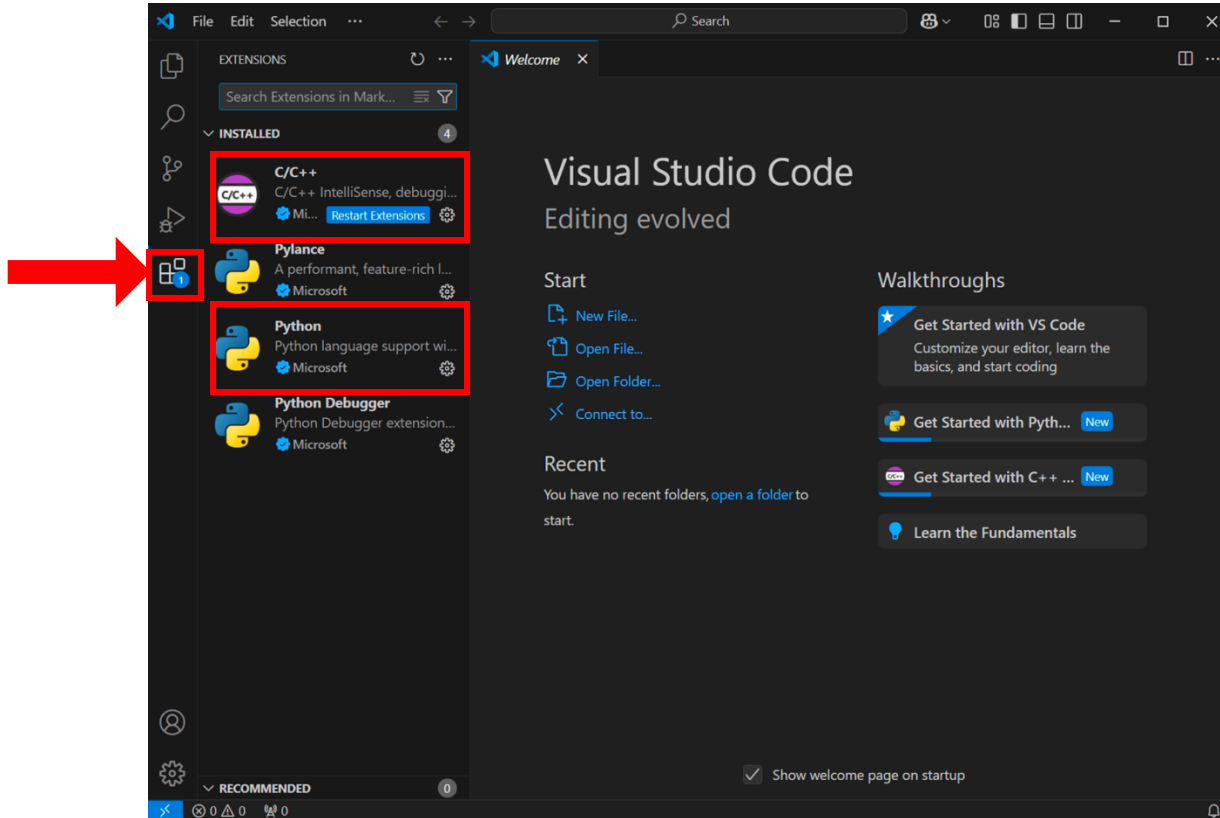
Visual Studio Code Installation

- VS Code: <https://code.visualstudio.com/>



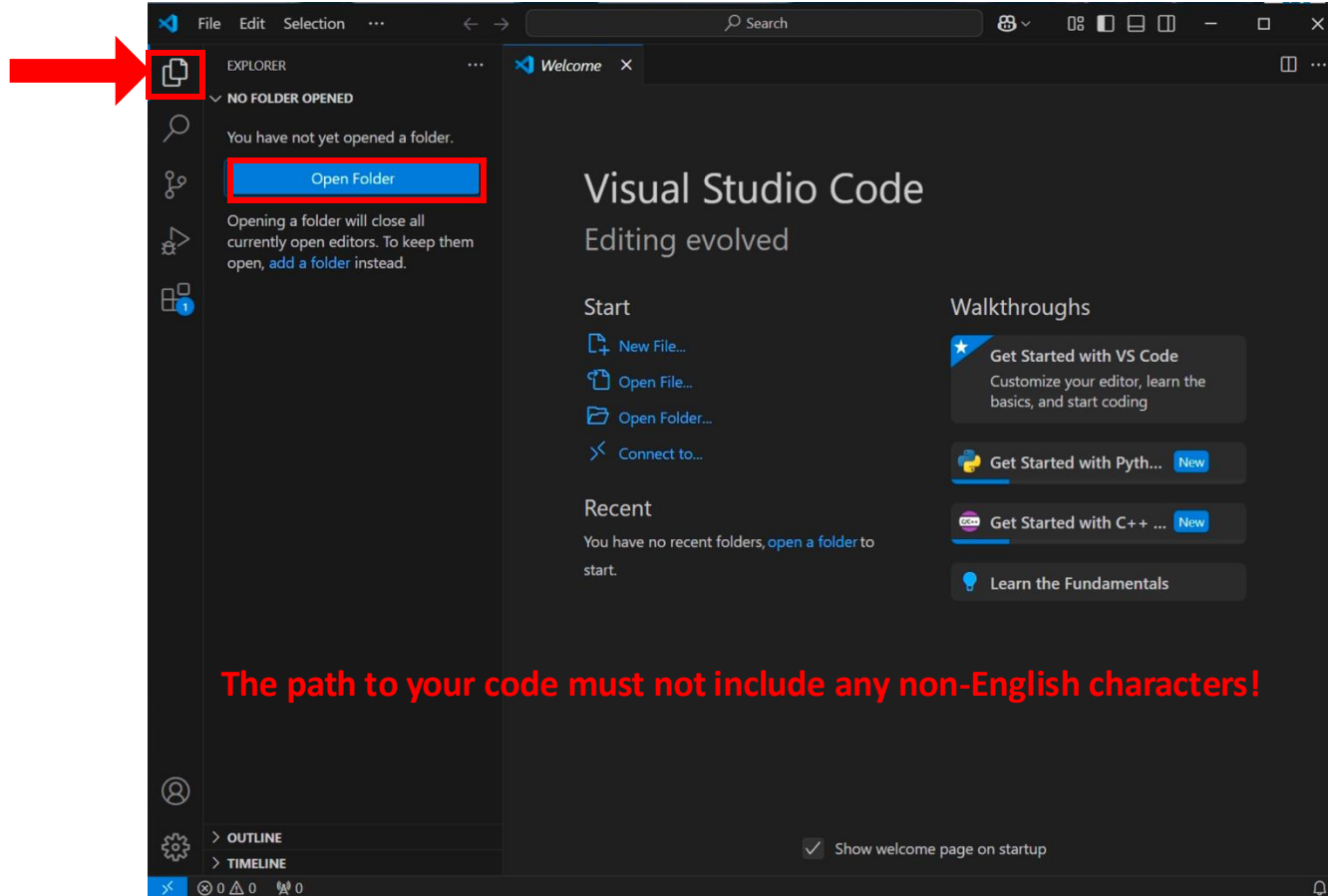
Visual Studio Code Installation

- Install C/C++ & Python extensions



Visual Studio Code Installation

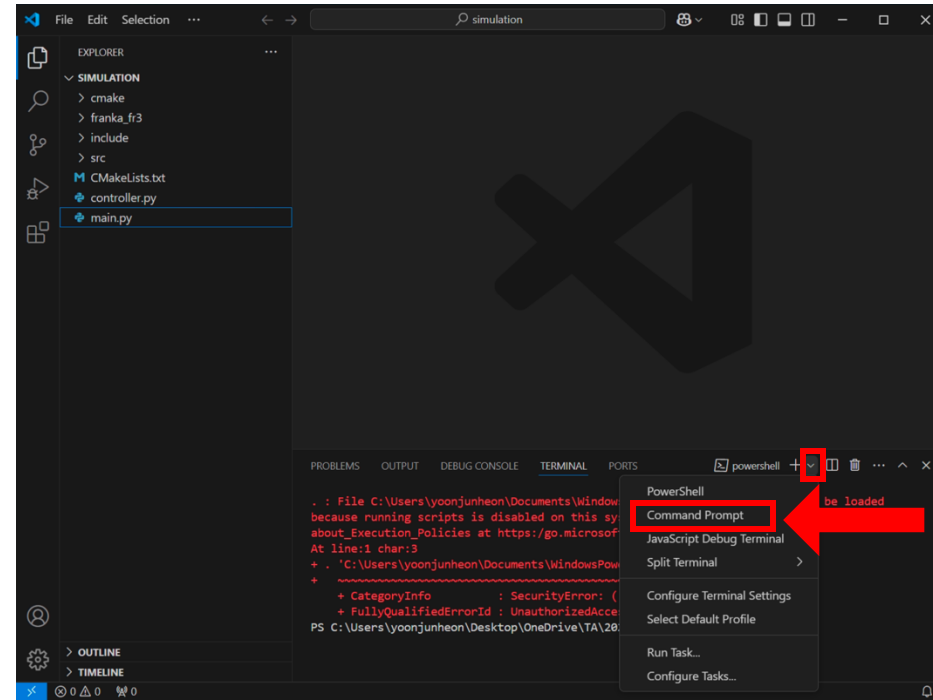
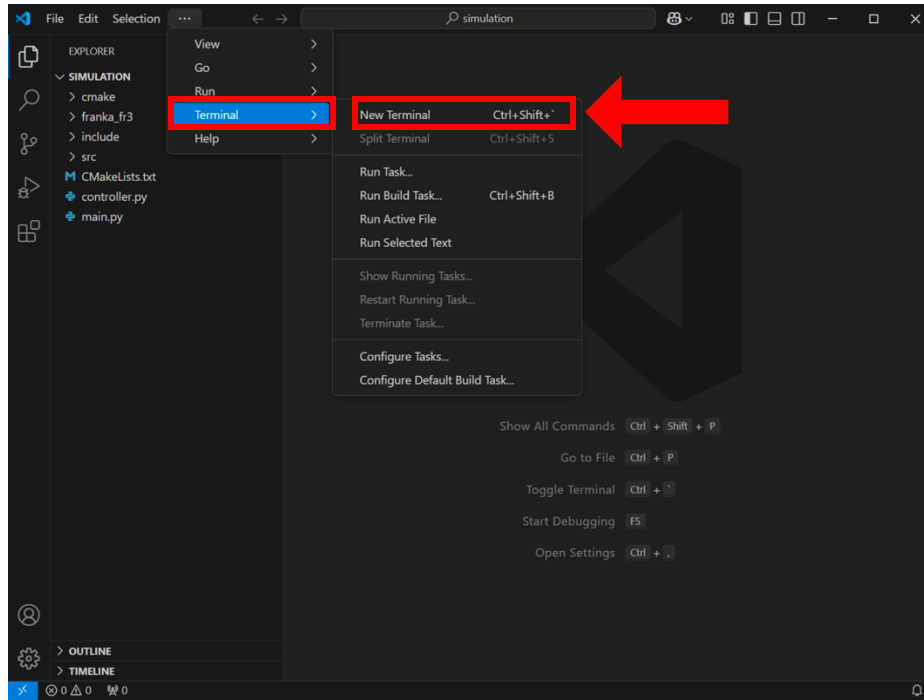
- Open cRobotics folder



The path to your code must not include any non-English characters!

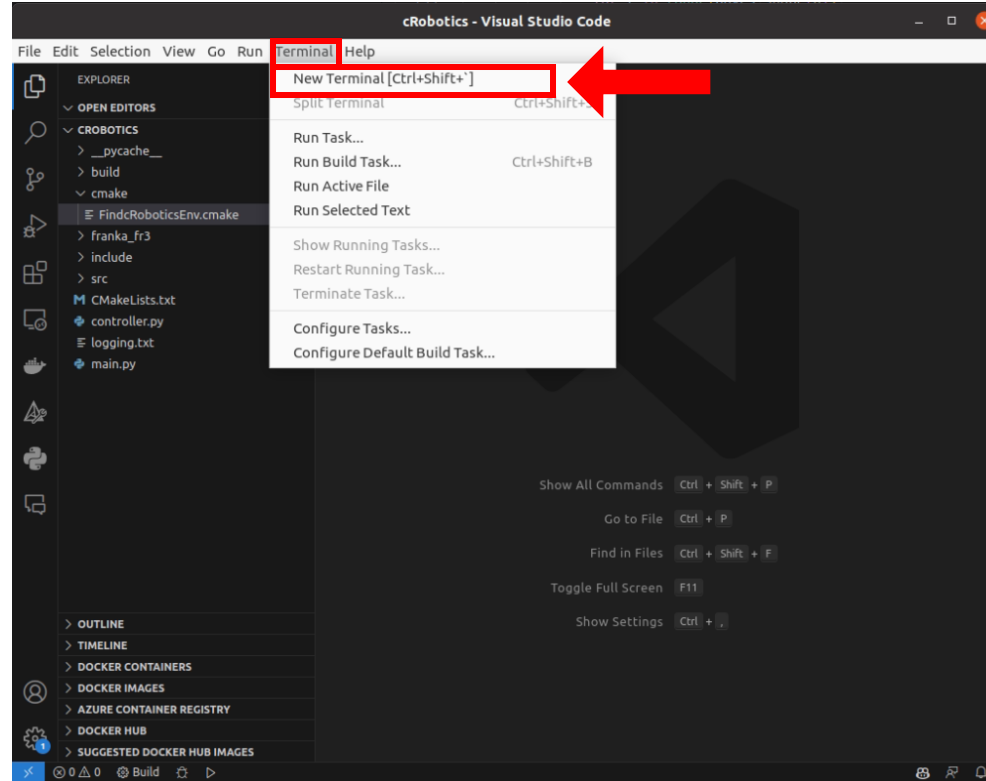
Visual Studio Code Installation

- Open CMD (WIN)



Visual Studio Code Installation

- Open CMD (Linux)



Simulation Execution

- Build your code
- For Window

```
$ conda activate cRobotics
```

```
$ cmake -G "Visual Studio 17 2022" -A x64 -S . -B build
```

```
$ cmake --build build --config Release
```

- For Linux

```
$ conda activate cRobotics
```

```
$ export LD_LIBRARY_PATH="${CONDA_PREFIX}/lib:${LD_LIBRARY_PATH}"
```

```
$ mkdir build && cd build
```

```
$ cmake .. && make && cd ..
```

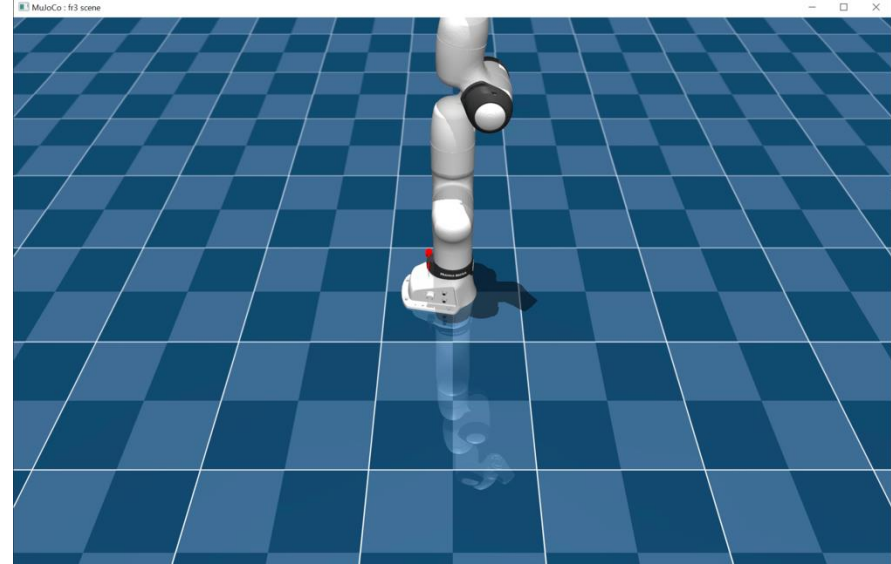
Simulation Execution

- Execute code

After building the code successfully,
You can execute MuJoCo as:

```
$ python main.py --control_mode position  
torque
```

✂ Make sure that cRobotics conda env. is activated!



Troubleshooting

- Build error

- Make sure conda is installed.
- Check whether '**conda env list**' can be entered in CMD/terminal.
- Reboot PC.

```
/Community/VC/Tools/MSVC/14.42.34433/bin/Hostx64/x64/cl.exe - skipped
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- CMAKE_MODULE_PATH: C:/Users/yoonsunheon/Downloads/simulation/cmake
-- Raw output of 'conda env list':
-- Raw output of 'conda env list':
CMake Error at cmake/FindcRoboticsEnv.cmake:33 (message):
  cRobotics environment not found. Please ensure the environment is created.
Call Stack (most recent call first):
  CMakeLists.txt:14 (include)

-- Configuring incomplete, errors occurred!
```

- Make sure activation of cRobotics env.
- Remove build folder.
- Re-build code after activate the conda env.

```
LINK : fatal error LNK1104: 'boost_python312.lib' 파일을 열 수
없습니다. [C:\Users\yoonsunheon\Desktop\OneDrive\TA\2025-1-ro
botics\simulation\build\cRoboticsController_wrapper_
cpp.vcxproj]
```

Troubleshooting

- Build error
 - The path to your code must not include any non-English characters!
 - Make path as English.
 - Remove build folder.
 - Re-build.

```
cRoboticsController_wrapper_cpp.vcxproj -> C:\Users\yoonyunheon\Desktop\OneDrive\TA\2025-1-robotics\임시\simulation\build\Release\cRoboticsController_wrapper_cpp.pyd
Building Custom Rule C:/Users/yoonyunheon/Desktop/OneDrive/TA/2025-1-robotics/임시/simulation/CMakeLists.txt
```

Questions

- Simulation & Robot exp. TA

윤준헌 – yoonjh98@snu.ac.kr