

Native Installation of Integrated Vision System App on Windows System

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1. Anaconda

- 1) Install Anaconda from <https://docs.anaconda.com/anaconda/install/index.html>

Installing on Windows

Note

Using Anaconda in a commercial setting? You may need to purchase a license to stay compliant with our [Terms of Service](#). This can be accomplished through [Anaconda Commercial Edition](#), [Anaconda Team Edition](#), or [Anaconda Enterprise](#). If you have already purchased Commercial Edition, please proceed to the [Authenticating Commercial Edition](#) section after completing your installation here.

Haven't purchased Commercial Edition yet? Visit <https://anaconda.cloud/register> to get started.

1. **Download the Anaconda installer**
2. RECOMMENDED: [Verify data integrity with SHA-256](#). For more information on hashes, see [What about cryptographic hash verification?](#)
3. Double click the installer to launch.

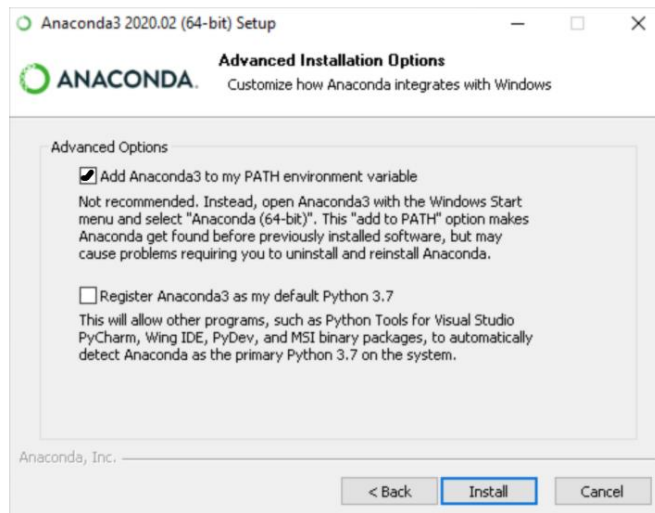
Note

To prevent permission errors, do not launch the installer from the [Favorites folder](#).

Note

If you encounter issues during installation, temporarily disable your anti-virus software during install, then re-enable it after the installation concludes. If you installed for all users, uninstall Anaconda and re-install it for your user only and try again.

- 2) During installation there will be an Advanced Installation Options page, check "Add Anaconda3 to my PATH environment variable"



2. Git

- 3) Next install git from <https://git-scm.com/download/win>

Download for Windows

Click [here](#) to download the latest (2.35.1) 64-bit version of Git for Windows. This is the most recent maintained build. It was released 2 days ago, on 2022-02-01.

Other Git for Windows downloads

- Standalone Installer
- 32-bit Git for Windows Setup.
- 64-bit Git for Windows Setup.**
- Portable ("thumbdrive edition")
- 32-bit Git for Windows Portable.
- 64-bit Git for Windows Portable.

Using winget tool

Install winget tool if you don't already have it, then type this command in command prompt or Powershell.

```
winget install --id Git.Git -e --source winget
```

3. MQTT Broker (Mosquitto)

- 4) Install Mosquitto from <https://mosquitto.org/download/>

Source

- [mosquitto-2.0.14.tar.gz](#) (GPG signature)
- [Git source code repository](#) (github.com)

Older downloads are available at <https://mosquitto.org/files/>

Binary Installation

The binary packages listed below are supported by the Mosquitto project. In many cases Mosquitto is also available directly from official Linux/BSD distributions.

Windows

- [mosquitto-2.0.14-install-windows-x64.exe](#) (64-bit build, Windows Vista and up, built with Visual Studio Community 2019)
- [mosquitto-2.0.14-install-windows-x32.exe](#) (32-bit build, Windows Vista and up, built with Visual Studio Community 2019)

Older installers can be found at <https://mosquitto.org/files/binary/>.

See also [README-windows.md](#) after installing.

Mosquitto En

These projects can features to Mosqui

Management Cent


Mosquitto instance a convenient UI for and roles as in the plugin.

mosquitto-go-auth and authorisation ; backends and feati

Mosquitto-PHP: A libmosquitto client MQTT clients in PH

4. Postgre SQL

- 5) Then install <https://www.postgresql.org/download/windows/>

Windows installers 

Interactive installer by EDB

Download the installer certified by EDB for all supported PostgreSQL versions.

Note! This installer is hosted by EDB and not on the PostgreSQL community servers. If you have issues with the website it's hosted on, please contact webmaster@enterprisedb.com.

This installer includes the PostgreSQL server, pgAdmin; a graphical tool for managing and developing your databases, and StackBuilder; a package manager that can be used to download and install additional PostgreSQL tools and drivers. Stackbuilder includes management, integration, migration, replication, geospatial, connectors and other tools.

This installer can run in graphical or silent install modes.

The installer is designed to be a straightforward, fast way to get up and running with PostgreSQL on Windows.

Advanced users can also download a [zip archive](#) of the binaries, without the installer. This download is intended for users who wish to include PostgreSQL as part of another application installer.

Platform support

The installers are tested by EDB on the following platforms. They can generally be expected to run on other comparable versions, for example, desktop releases of Windows:

PostgreSQL Version	64 Bit Windows Platforms	32 Bit Windows Platforms
14	2019, 2016	
13	2019, 2016	

- 6) Click the **Download the installer** text seen on the page
- 7) Make sure you note down the password for postgres as you will need it to login to the app later

5. Microsoft Visual Studio

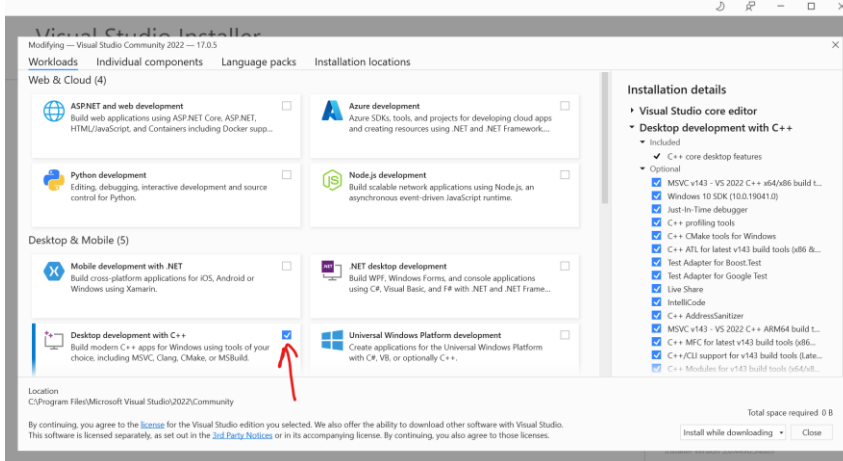
- 8) Install visual studio from <https://visualstudio.microsoft.com/>

Meet the Visual Studio



The banner features the Visual Studio logo at the top left. Below it, the text reads "Visual Studio" followed by "Version 17.0". A paragraph describes it as "The best comprehensive IDE for .NET and C++ developers on Windows. Fully packed with a sweet array of tools and features to elevate and enhance every stage of software development." A red arrow points down to a dark button labeled "Download Visual Studio" with a small downward arrow icon.

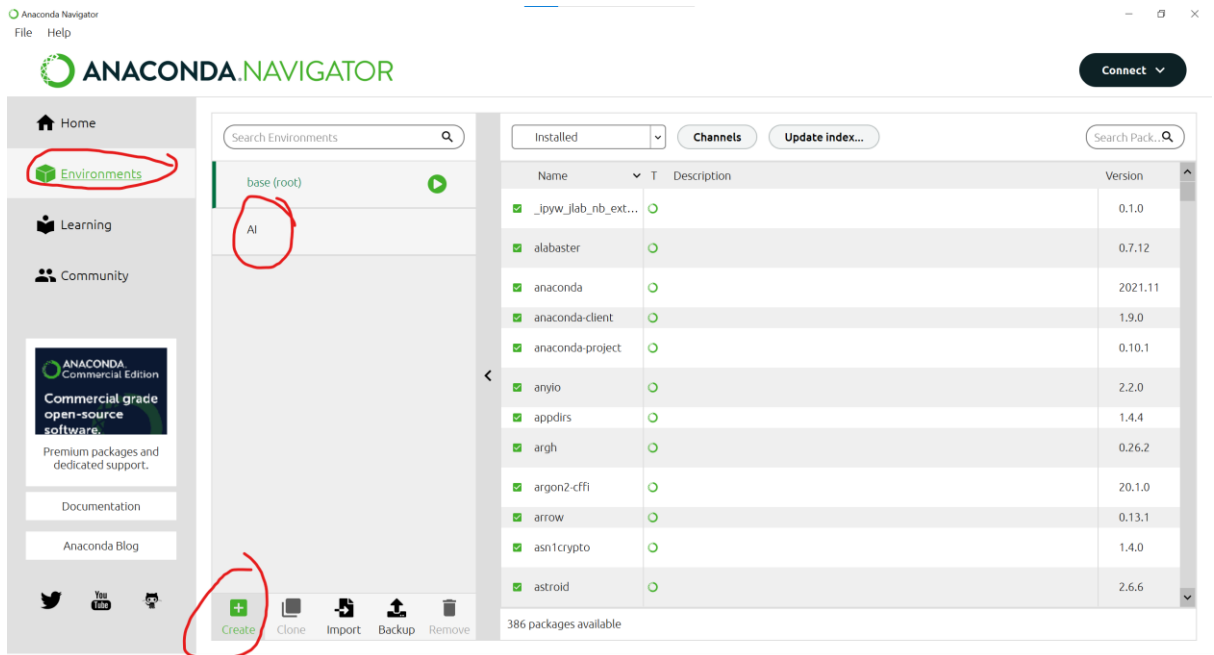
- 9) If you already have visual studio, make sure to update and repair it
10) Make sure during installation of visual studio check "Desktop development with C++"



The screenshot shows the Visual Studio Installer window. The "Workloads" tab is selected, showing various development workloads. The "Desktop development with C++" workload is selected, indicated by a red arrow. The "Installation details" pane on the right shows the selected features for this workload, including "C++ core desktop features" and "Optional" features like "MSVC v143 - VS 2022 C++ x64/x86 build L...", "Windows 10 SDK (10.0.19041.0)", "Just-In-Time debugger", "C++ profiling tools", "C++ OMake tools for Windows", "C++ ATL for latest v143 build tools (x64 &...)", "Test Adapter for Boost.Test", "Live Share", "Intellicode", "C++ AddressSanitizer", "MSVC v143 - VS 2022 C++ x86/x64 build L...", "C++ MFC for latest v143 build tools (x64...)", and "C++/CLI support for v143 build tools (late...". The "Total space required" is shown as 0 B. At the bottom, there is a license agreement and an "Install while downloading" button.

6. Creating Conda Environment

- 11) Boot up anaconda and go to environments
- 12) Create a new environment and name it whatever you please. For the python version set it to 3.9



- 13) To open the conda environment click the play button next to the environment you want to open, then click open in terminal. Then copy the following lines one by one into the terminal

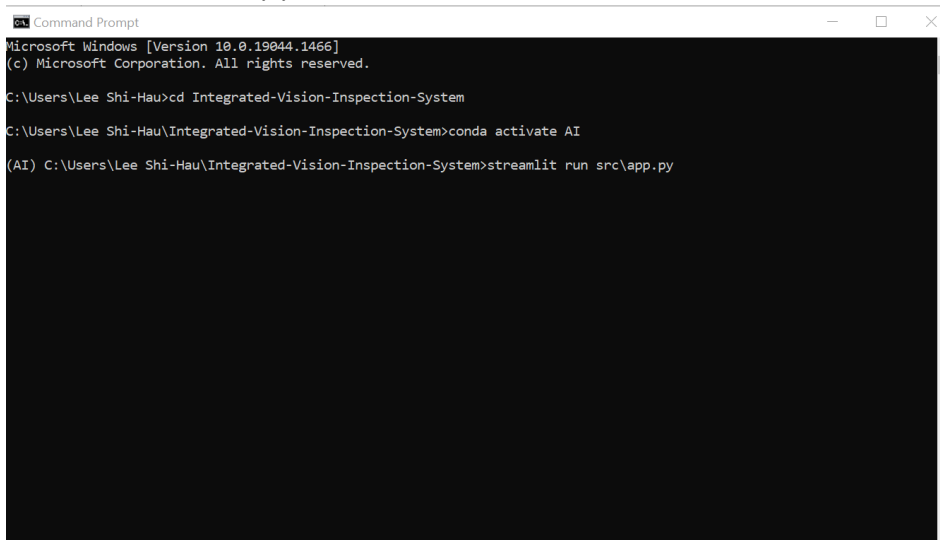
7. Nvidia Drivers

- 14) Install Nvidia drivers for your graphics card if you don't have one installed from <https://www.nvidia.com/download/index.aspx>
- 15) Install Nvidia toolkit version 11.2 by running the following command in your environment `conda install -c conda-forge cudatoolkit=11.2.2`
- 16) Install Cudnn version 8.1 by running the following command in your environment `conda install -c conda-forge cudnn=8.1.0.77`

8. Installing The App

- 17) Run the following commands below in your environment to install the app
 - git clone <https://github.com/msf4-0/Integrated-Vision-Inspection-System.git>
 - cd Integrated-Vision-Inspection-System
 - pip install -r requirements_no_hash.txt
 - cd Integrated-Vision-Inspection-System
- 18) Check if you have GPU support by running the following code:
 - `python -c "import tensorflow as tf; print('\Num GPUs Available: \', len(tf.config.list_physical_devices('GPU')))"`
- 19) Install TensorFlow Object Detection API by running this command within our project directory.
 - `python src/lib/machine_learning/tfod_installation.py`

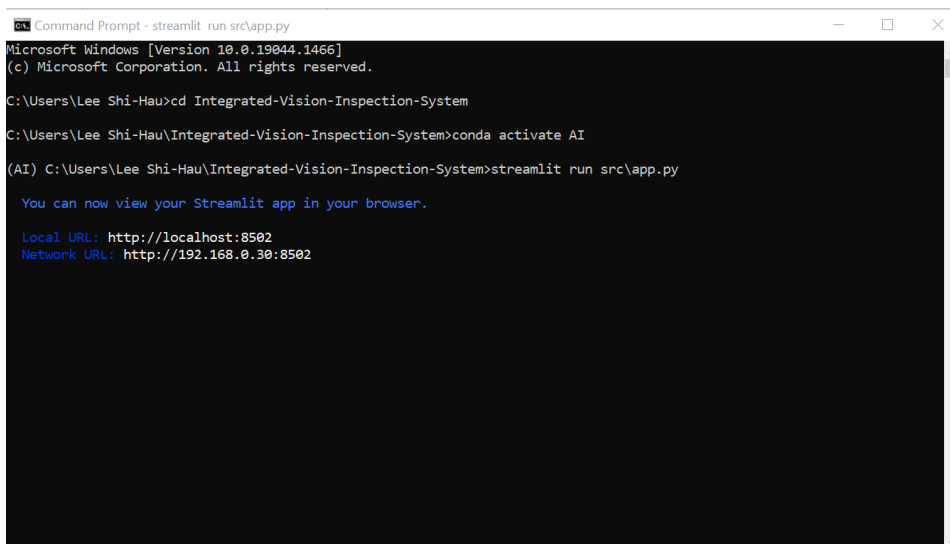
20) To run the app, make sure you first cd Integrated-Vision-Inspection-System then go to the conda directory you created



```
Command Prompt
Microsoft Windows [Version 10.0.19044.1466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Lee Shi-Hau>cd Integrated-Vision-Inspection-System
C:\Users\Lee Shi-Hau>Integrated-Vision-Inspection-System>conda activate AI
(AI) C:\Users\Lee Shi-Hau>Integrated-Vision-Inspection-System>streamlit run src/app.py
```

21) Type streamlit run src\app.py



```
Command Prompt - streamlit run src/app.py
Microsoft Windows [Version 10.0.19044.1466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Lee Shi-Hau>cd Integrated-Vision-Inspection-System
C:\Users\Lee Shi-Hau>Integrated-Vision-Inspection-System>conda activate AI
(AI) C:\Users\Lee Shi-Hau>Integrated-Vision-Inspection-System>streamlit run src/app.py

You can now view your Streamlit app in your browser.

Local URL: http://localhost:8502
Network URL: http://192.168.0.30:8502
```

Potential Errors

If you encounter any errors relating to pycocotools when running the app. Check the version of pycocotools by running the following code “pip freeze” this will list down all the extensions. The correct version should be version 2.0.2, if it isn’t run the following code “pip install pycocotools==2.0.2”. If its already in that version but still gives errors, try installing version 2.0.3 instead by running the following code “pip install pycocotools==2.0.3”.