

DEPLOYMENT MANUAL

Bedside Navigator with UCL FISECARE v2.0

Prerequisites:

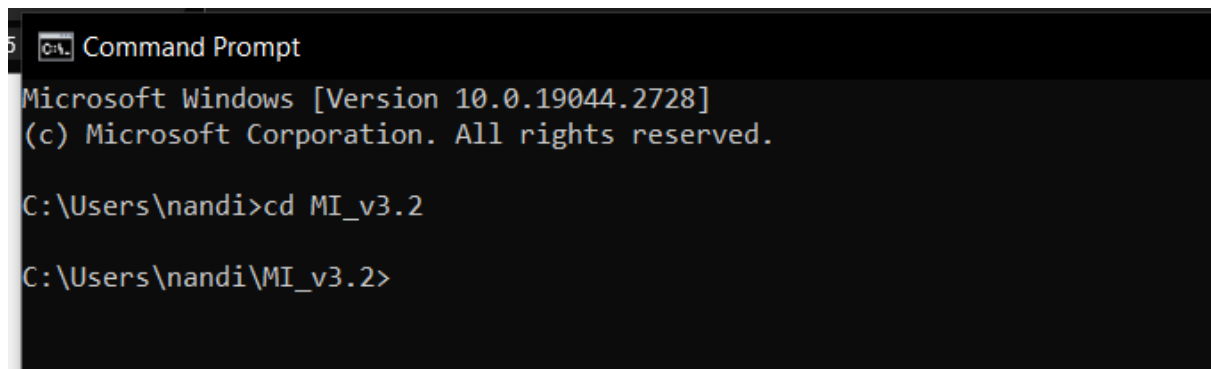
- Visual Studio 2022 version 17.0 or later
- Python 3.9

Build and Deploy

Step 1: Clone repository or download code from [GitHub](#) (private).

Step 2: Open **Command Prompt**.

Step 3: Navigate to inside the folder '**MI_v3.2**' on your computer on Command Prompt.

A screenshot of a Windows Command Prompt window. The title bar reads 'Command Prompt'. The text inside shows the Windows version '10.0.19044.2728' and copyright information for Microsoft Corporation. The user has entered the command 'cd MI_v3.2' and the prompt has moved to the directory 'C:\Users\nandi\MI_v3.2'.

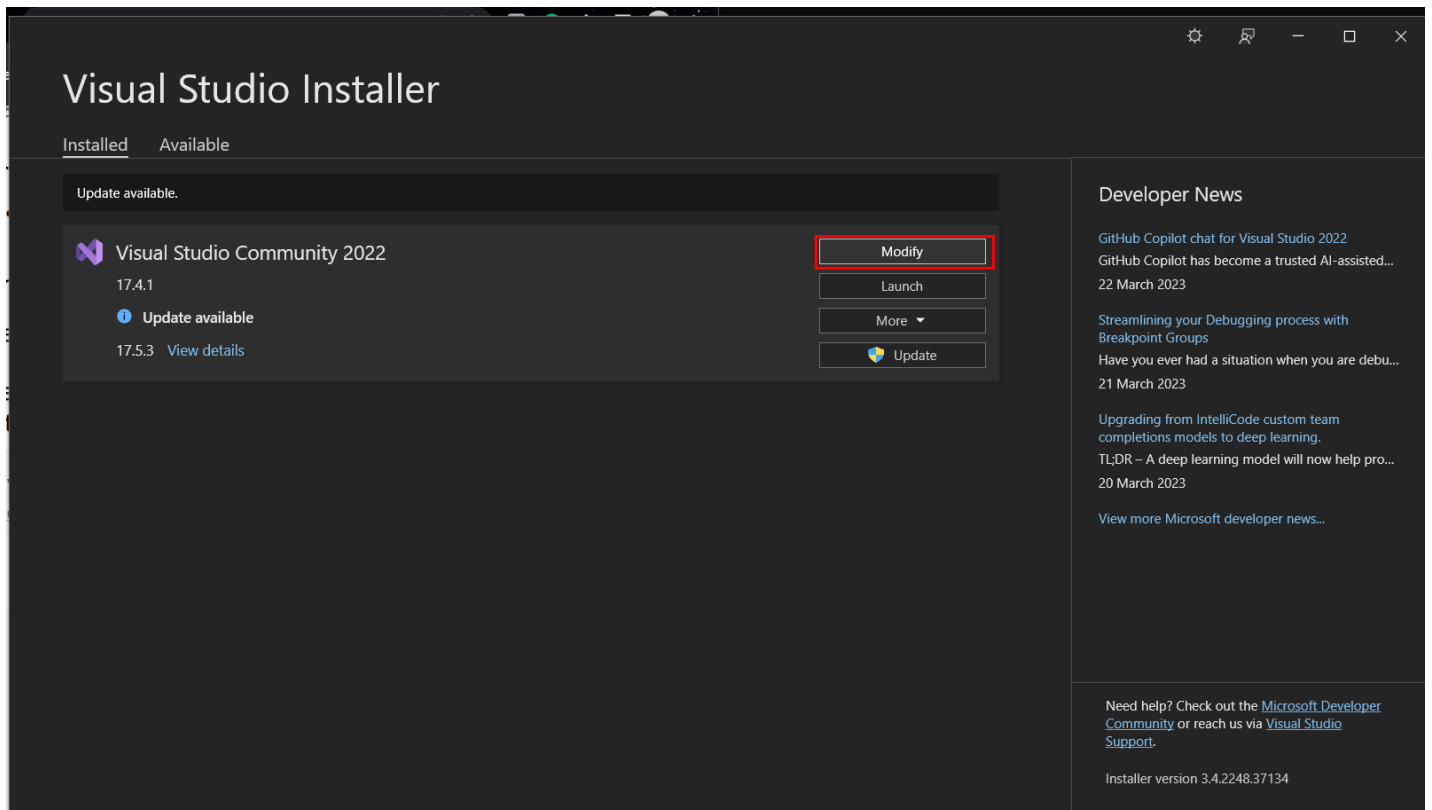
Step 4: Then run the command '**pip install -r requirements.txt**'.

Step 5: Once this finished, run the command '**python build.py motioninput_api.py**'.

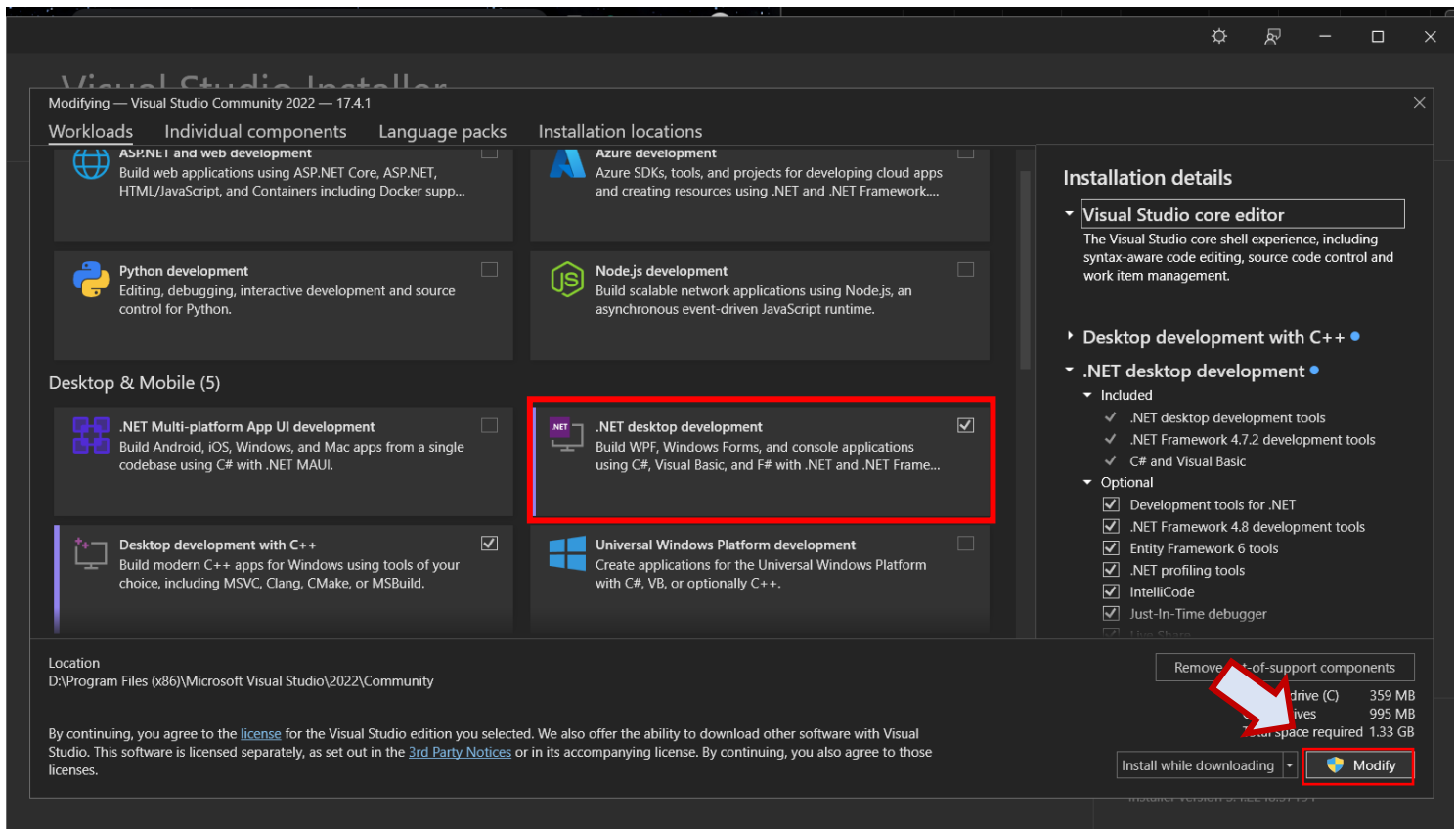
This process can take a long time, sometimes up to an hour depending on your computer.

Step 6: Install [Microsoft Visual Studio](#) version 17.0 or later.

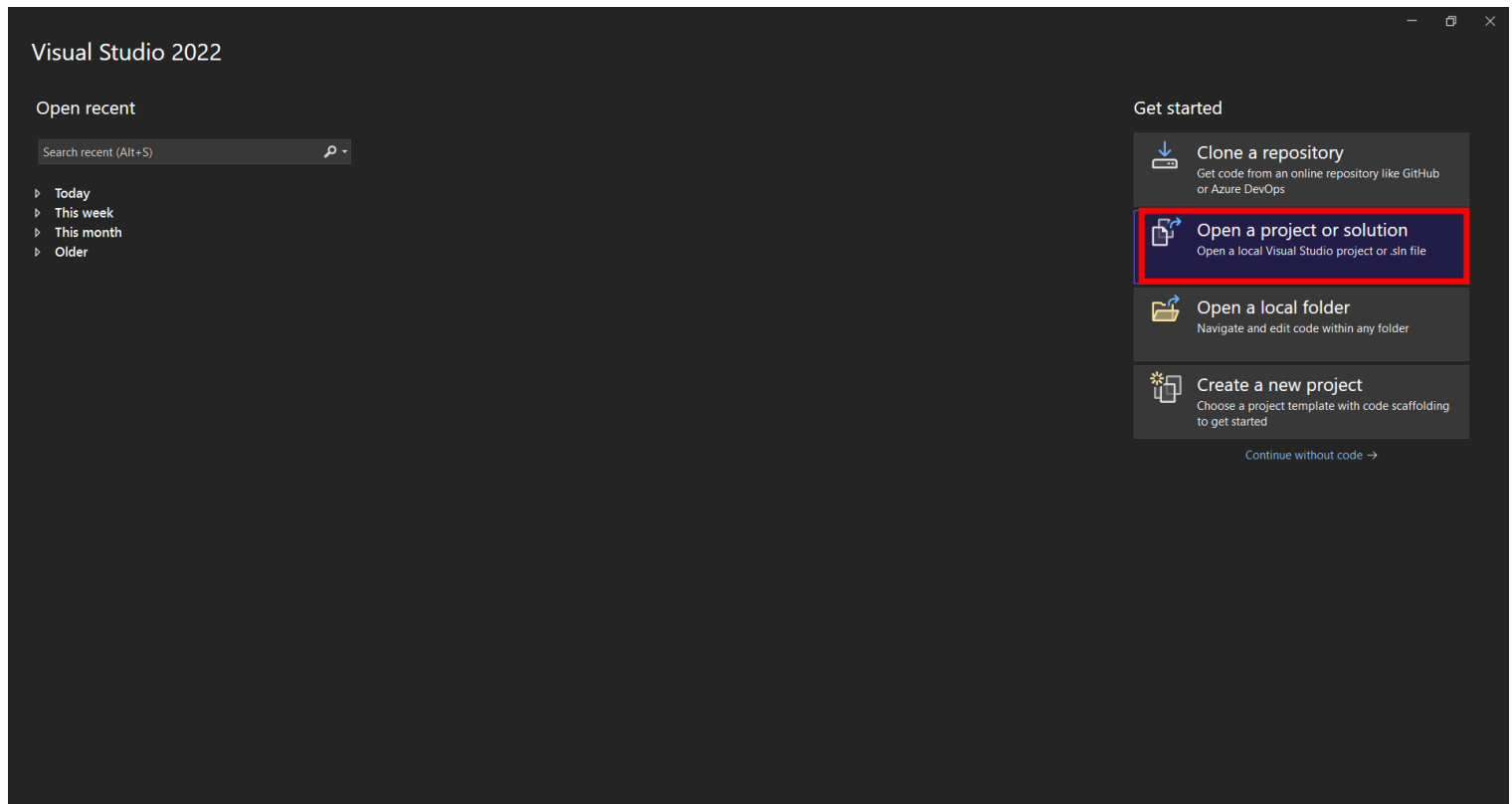
Step 7: Launch the Visual Studio Installer and click on the **Modify** button.



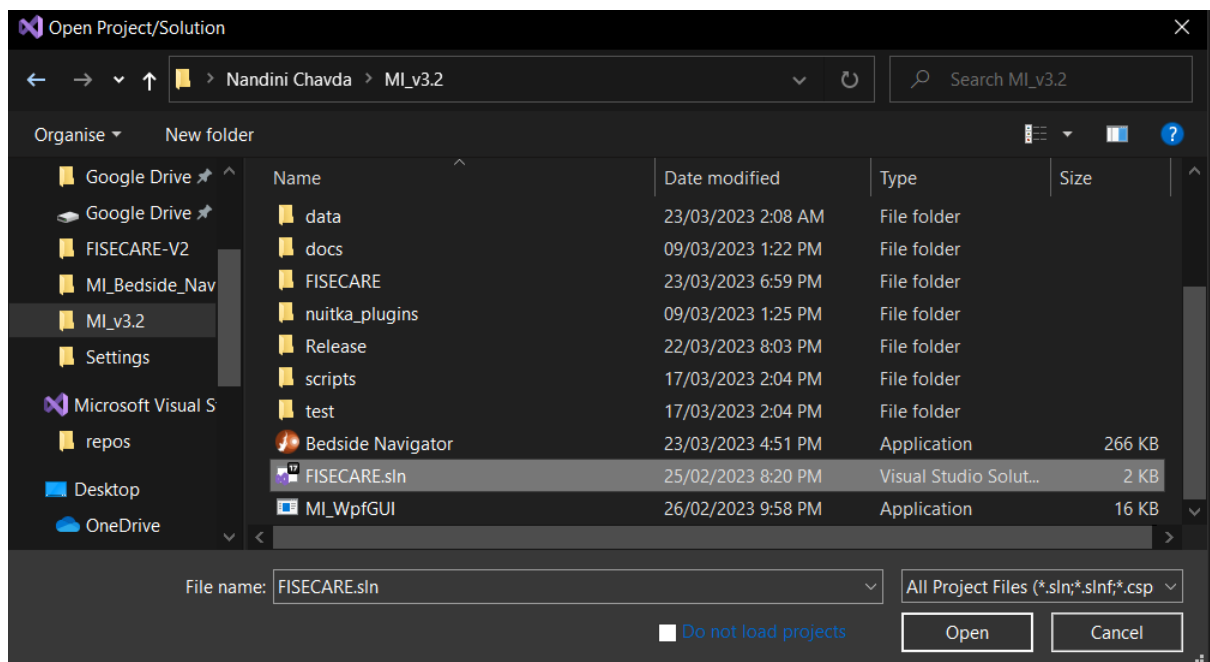
Step 8: In the Visual Studio Installer, select **.NET desktop development** and click on the **Modify** button.



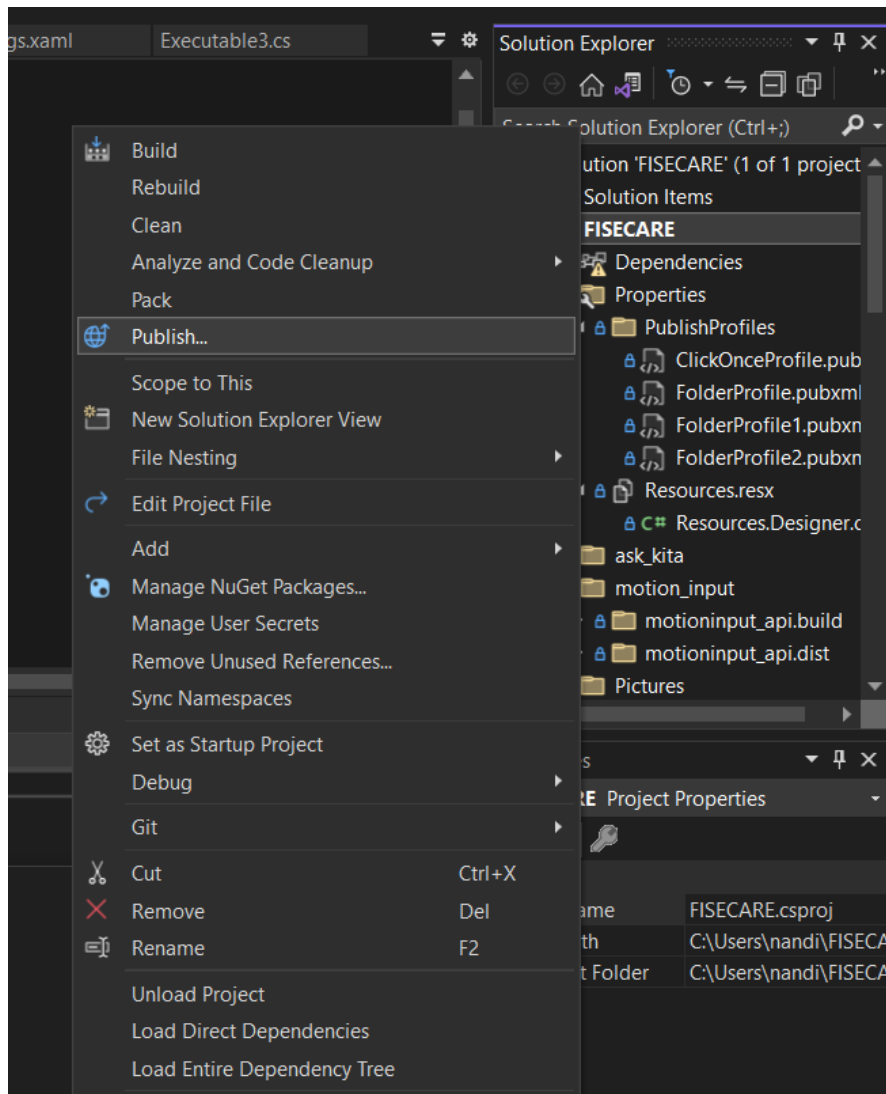
Step 9: Launch Visual Studio and click on **Open a project or solution** button.



Step 6: Open **FISECARE.sln** in the downloaded folder, 'MI_v3.2'.

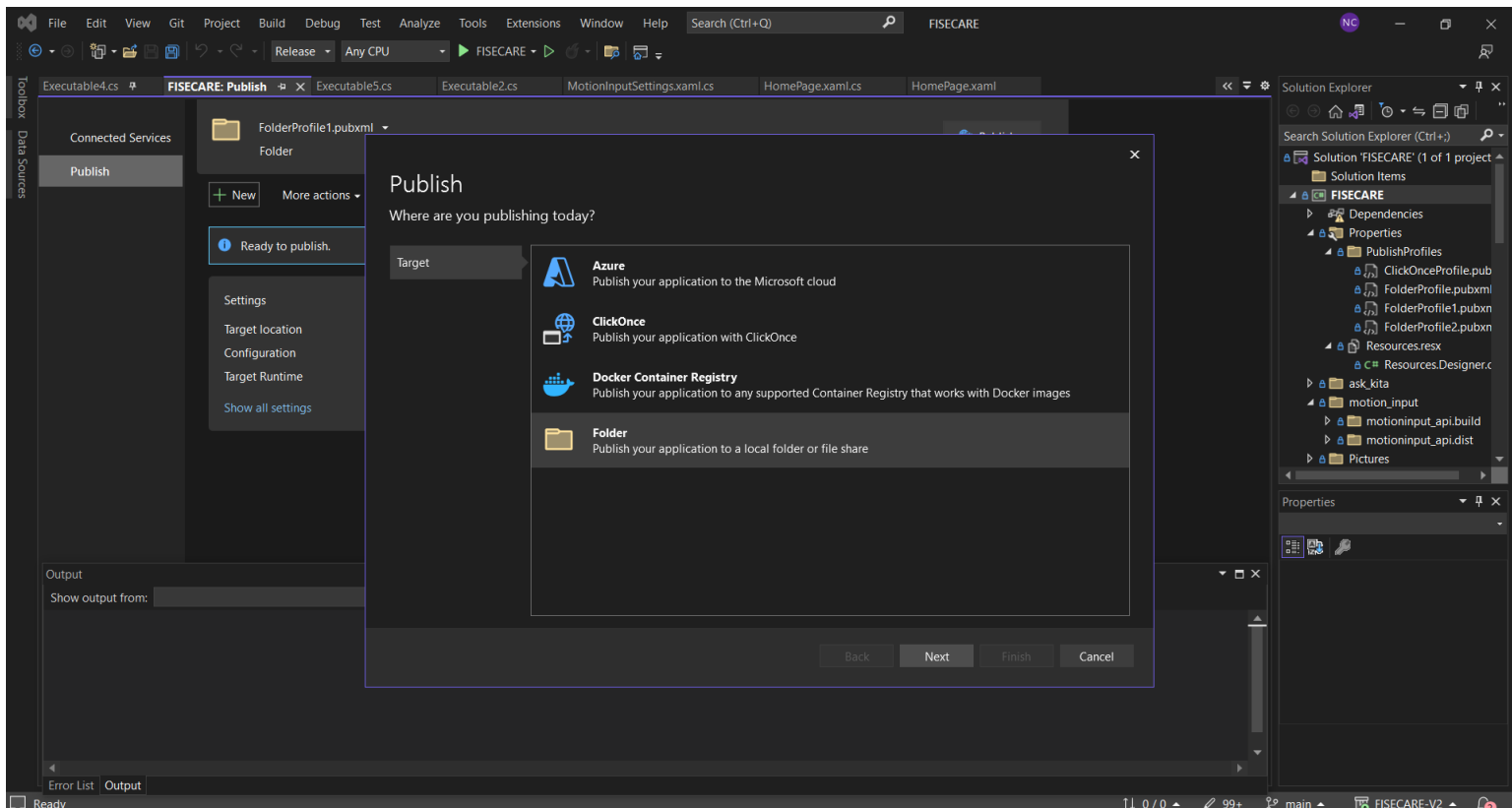


Step 7: To deploy the application, right-click on **FISECARE** in the Solution Explorer and click on the **Publish** button.



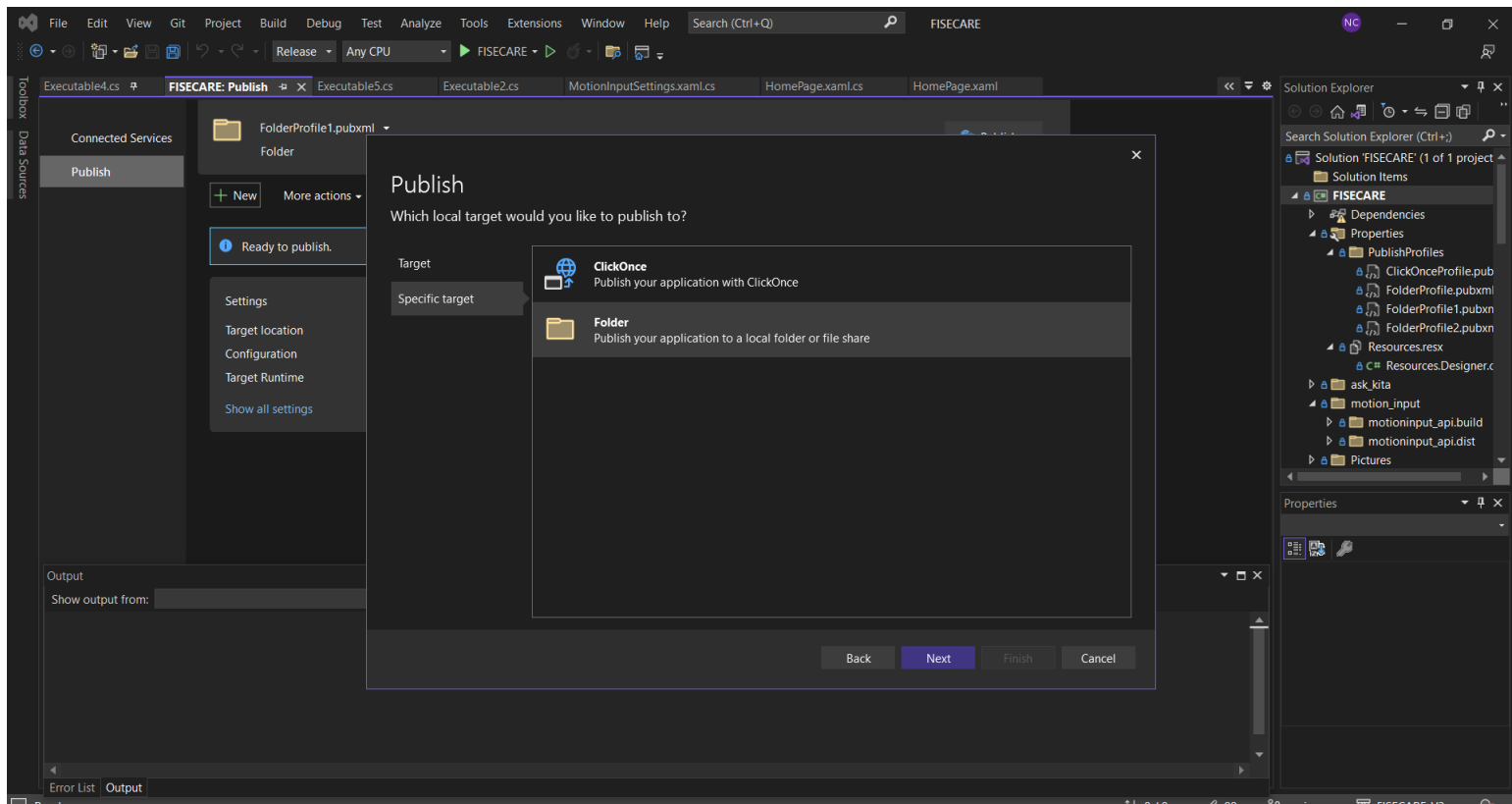
Step 8: A new tab will open. Click  to create a new publish profile.

Click the **'Folder'** option for your 'Target' as shown in the screenshot below:

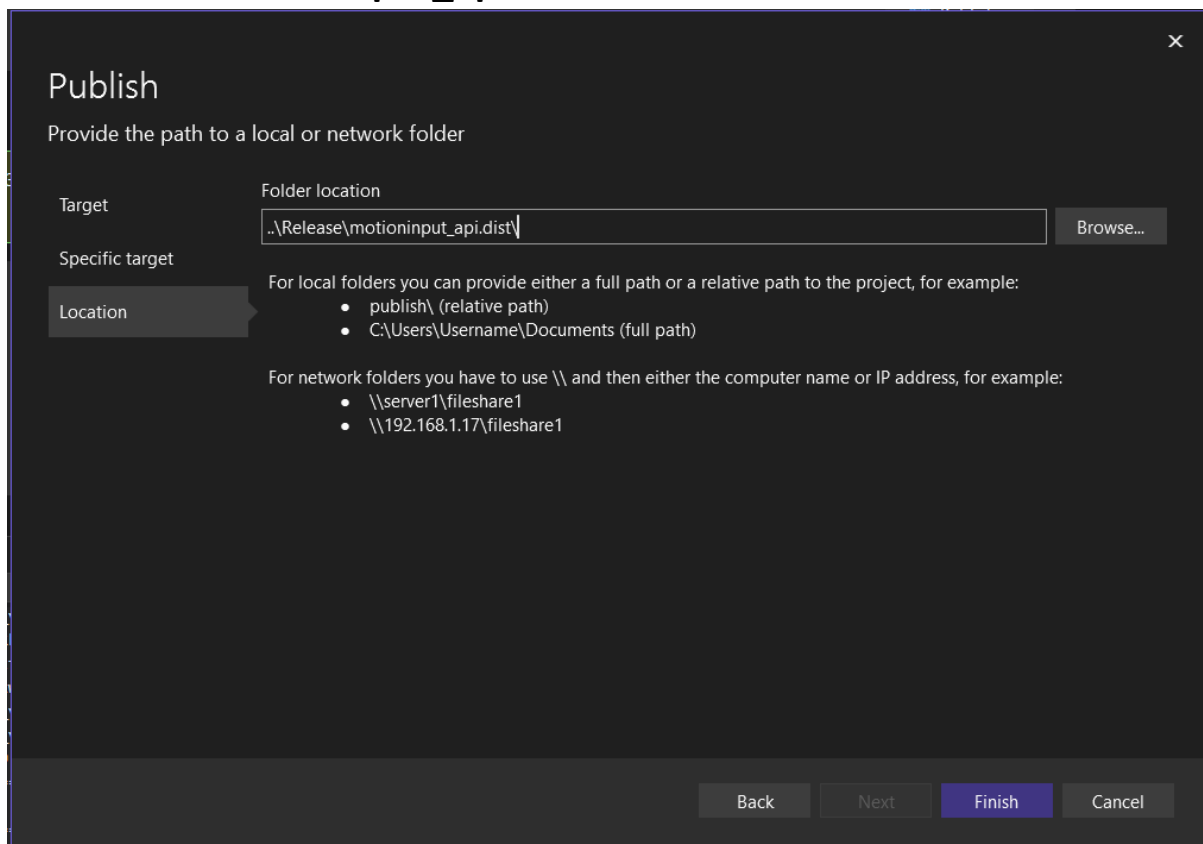


Then click **'Next'** in the bottom right corner.

Step 9: Select **Folder** again for your 'Specific Target'. Then click **Next**.



Step 10: For the **Folder location** enter the file path
'..\Release\motioninput_api.dist\'. Next, click '**Finish**'.



The image shows a 'Publish' dialog box with a dark theme. It has a title bar with a close button (X) in the top right corner. The main title 'Publish' is at the top left. Below it is the instruction 'Provide the path to a local or network folder'. On the left side, there is a vertical list of options: 'Target', 'Specific target', and 'Location'. 'Location' is currently selected and highlighted. To the right of 'Target', there is a section titled 'Folder location' which contains a text input field with the path '..\Release\motioninput_api.dist\' and a 'Browse...' button to its right. Below the 'Location' option, there is explanatory text and two bullet points for local folders: 'publish\' (relative path)' and 'C:\Users\Username\Documents (full path)'. Below that, there is text for network folders and two bullet points: '\\server1\fileshare1' and '\\192.168.1.17\fileshare1'. At the bottom of the dialog, there are four buttons: 'Back', 'Next', 'Finish' (which is highlighted in blue), and 'Cancel'.

Publish

Provide the path to a local or network folder

Target

Folder location

..\Release\motioninput_api.dist\ Browse...

Specific target

Location

For local folders you can provide either a full path or a relative path to the project, for example:

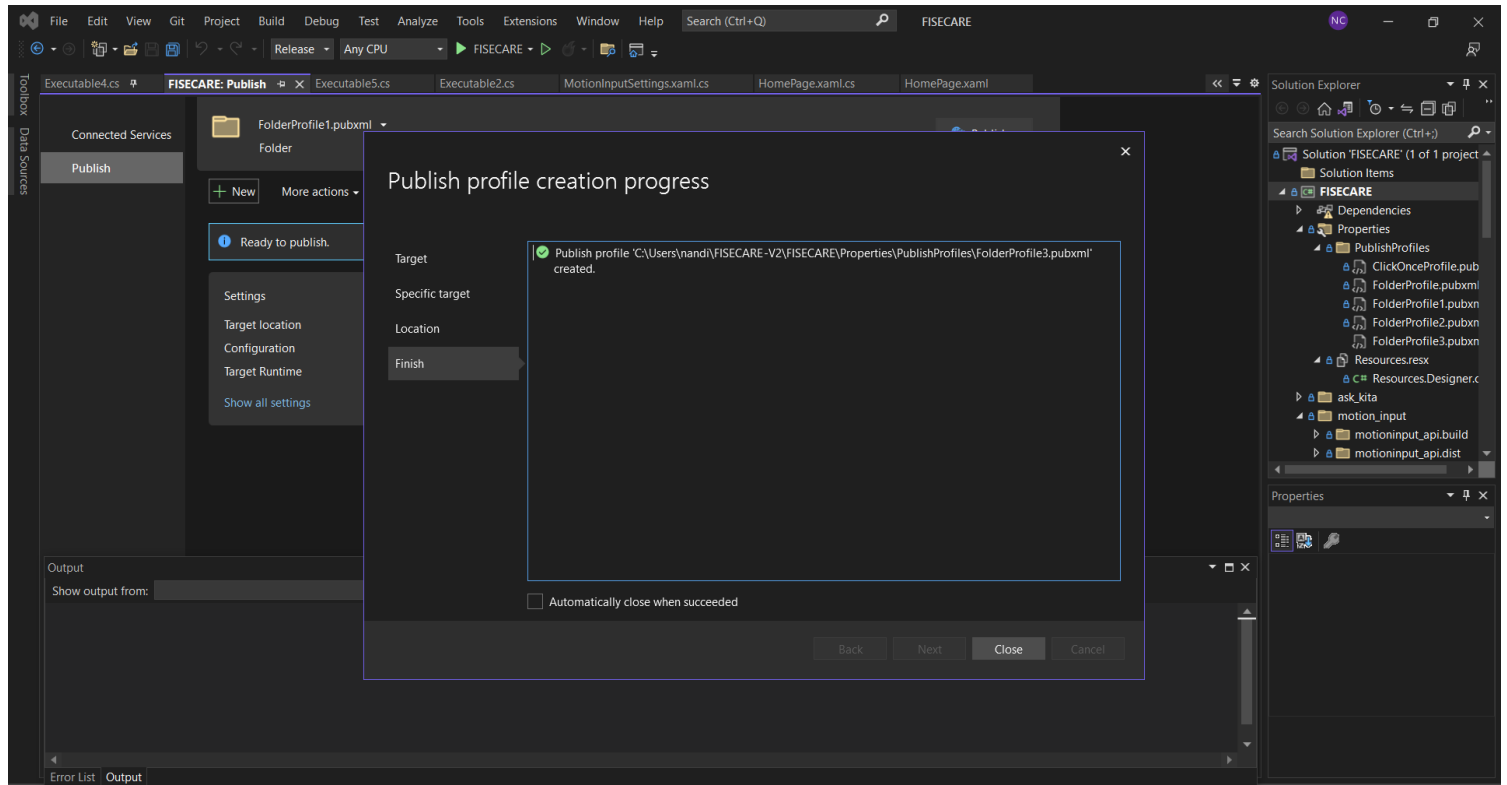
- publish\ (relative path)
- C:\Users\Username\Documents (full path)

For network folders you have to use \\ and then either the computer name or IP address, for example:

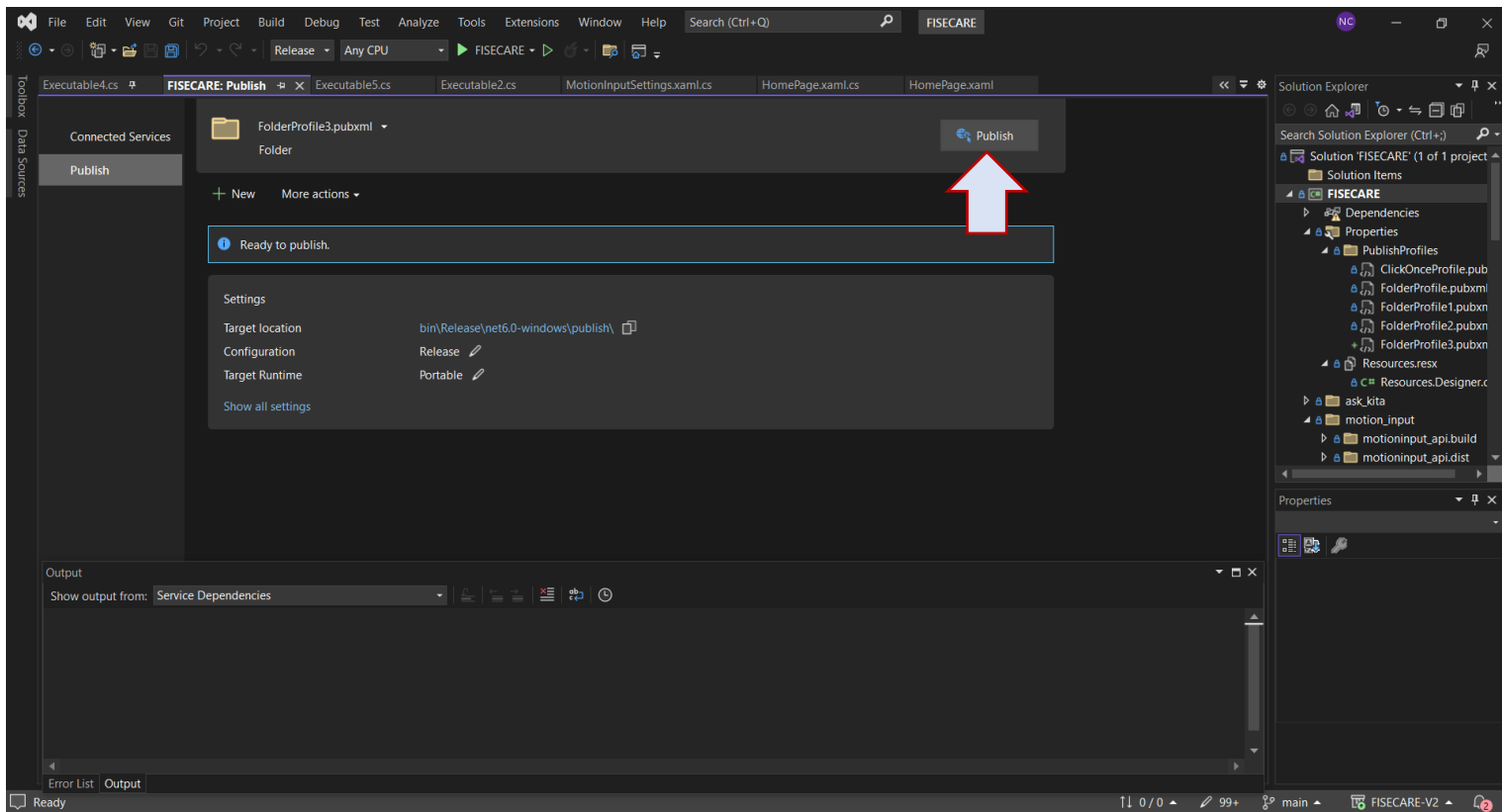
- \\server1\fileshare1
- \\192.168.1.17\fileshare1

Back Next Finish Cancel

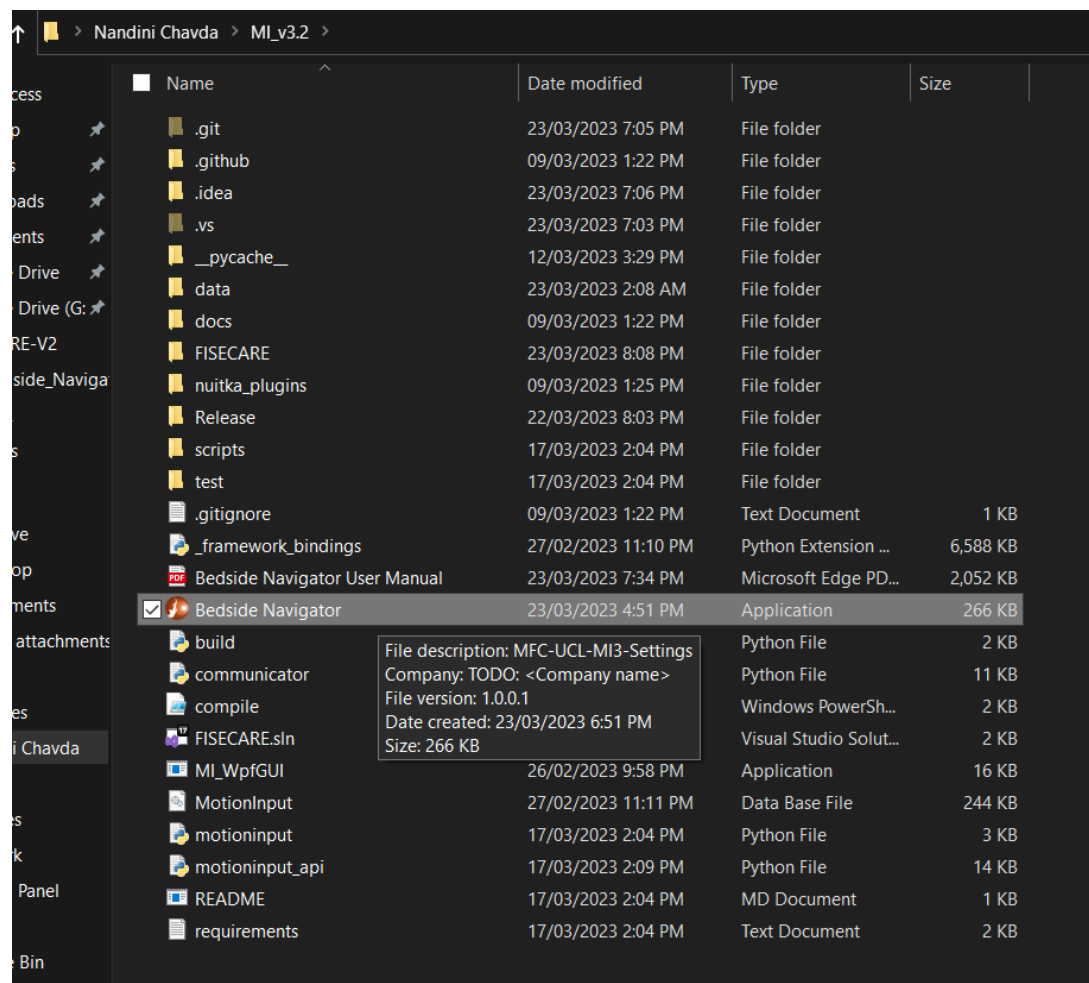
Step 11: A publish profile will be created. Close the window by clicking **‘Close’**.



Step 12: Finally, click **'Publish'**. Building will take a few seconds or minutes. You can find the **FISECARE.exe** in the **'Release/motioninput_api.dist'** folder selected for the publish profile.



Step 13: Using File Explorer, find the MFC Settings App called '**Bedside Navigator.exe**' in the downloaded folder '**MI_v3.2**'.



Step 14: **Copy** and **Paste** this .exe file into the folder '**Release/motioninput_api.dist/**'.

Step 15: Finally, **run** the Bedside Navigator by double-clicking on the '**Release/motioninput_api.dist/Bedside Navigator.exe**'. The User Manual can be found here:

<https://students.cs.ucl.ac.uk/2022/group27/appendices.html>

Running MotionInput's Bedside Navigator Without building

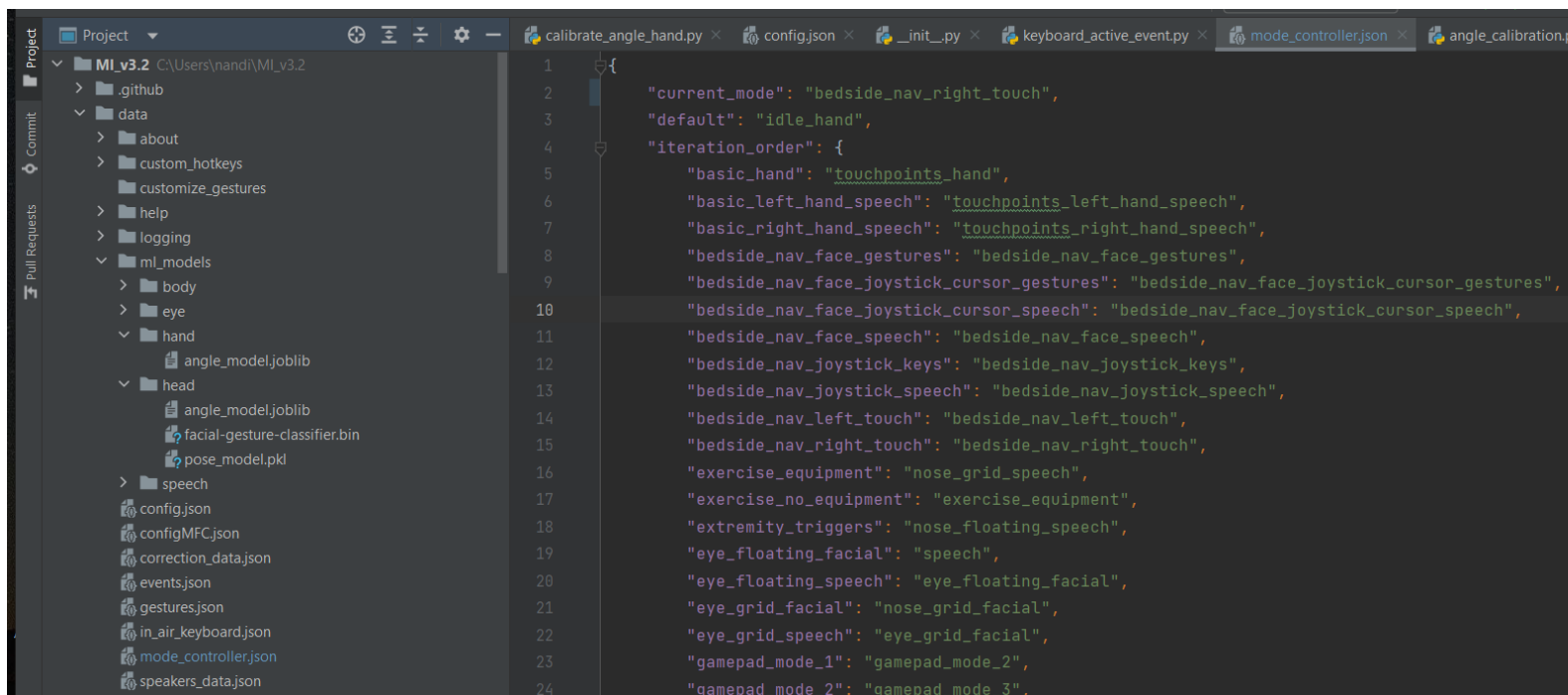
Step 1: Selecting a Mode

The available modes for the Bedside Navigator are:

1. **"bedside_nav_right_touch"**: Navigate the screen using your right hand
2. **"bedside_nav_left_touch"**: Navigate the screen using your left hand
3. **"bedside_nav_face_gestures"**: Navigate the screen using your nose and interact with your computer using face gestures such as smiling.
4. **"bedside_nav_face_speech"**: Navigate the screen using your nose and interact with your computer using speech commands such as 'Click'.
5. **"bedside_nav_face_joystick_cursor_gestures"**: Navigate the screen using your nose as a 4-way joystick and interact with your computer using face gestures such as smiling.
6. **"bedside_nav_face_joystick_cursor_speech"**: Navigate the screen using your nose as a 4-way joystick nose and interact with your computer using speech commands such as 'Click'.

The mode is changed in the file **'data/mode_controller.json'**.

Change the **"current_mode"** in the first line of the **mode_controller.json** file to one of the modes listed above.



```
1 {
2   "current_mode": "bedside_nav_right_touch",
3   "default": "idle_hand",
4   "iteration_order": {
5     "basic_hand": "touchpoints_hand",
6     "basic_left_hand_speech": "touchpoints_left_hand_speech",
7     "basic_right_hand_speech": "touchpoints_right_hand_speech",
8     "bedside_nav_face_gestures": "bedside_nav_face_gestures",
9     "bedside_nav_face_joystick_cursor_gestures": "bedside_nav_face_joystick_cursor_gestures",
10    "bedside_nav_face_joystick_cursor_speech": "bedside_nav_face_joystick_cursor_speech",
11    "bedside_nav_face_speech": "bedside_nav_face_speech",
12    "bedside_nav_joystick_keys": "bedside_nav_joystick_keys",
13    "bedside_nav_joystick_speech": "bedside_nav_joystick_speech",
14    "bedside_nav_left_touch": "bedside_nav_left_touch",
15    "bedside_nav_right_touch": "bedside_nav_right_touch",
16    "exercise_equipment": "nose_grid_speech",
17    "exercise_no_equipment": "exercise_equipment",
18    "extremity_triggers": "nose_floating_speech",
19    "eye_floating_facial": "speech",
20    "eye_floating_speech": "eye_floating_facial",
21    "eye_grid_facial": "nose_grid_facial",
22    "eye_grid_speech": "eye_grid_facial",
23    "gamepad_mode_1": "gamepad_mode_2",
24    "gamepad_mode_2": "gamepad_mode_3",
```

Step 2: Changing settings to run calibration.

Before running MotionInput: Bedside Navigator, it is necessary to run calibration for the camera at its current placement before using it at an angle.

If the modes:

- **'bedside_nav_face_gestures'**
- **'bedside_nav_face_speech'**

are selected then follow these steps:

1. Go to the file, 'data/config.json'.
 2. Find the key 'modules'.
 3. Then, find the key **'head'**.
 4. Then, find the key **'run_angle_calibration'**.
 5. Set this value to 'true'.
-

If the modes:

- **'bedside_nav_face_joystick_cursor_gestures'**
- **'bedside_nav_face_joystick_cursor_speech'**

are selected then follow these steps:

1. Go to the file, 'data/config.json'.
 2. Find the key 'modules'.
 3. Then, find the key **'head'**.
 4. Then, find the key **'run_pose_calibration'**.
 5. Set this value to 'true'.
-

If the modes:

- **'bedside_nav_left_touch'**
- **'bedside_nav_right_touch'**

are selected then follow these steps:

1. Go to the file, 'data/config.json'.
 2. Find the key 'modules'.
 3. Find the key **'hand'**.
 4. Then, find the key **'run_angle_calibration'**.
 5. Set this value to 'true'.
-

To **turn off** calibration, set the value back to 'false'.

Step 3: Run MotionInput

Finally, run the Python file **'motioninput_api.py'** to run MotionInput.

Step 4: Calibrating

If calibration was selected, then a calibration window will appear with instructions for calibration.

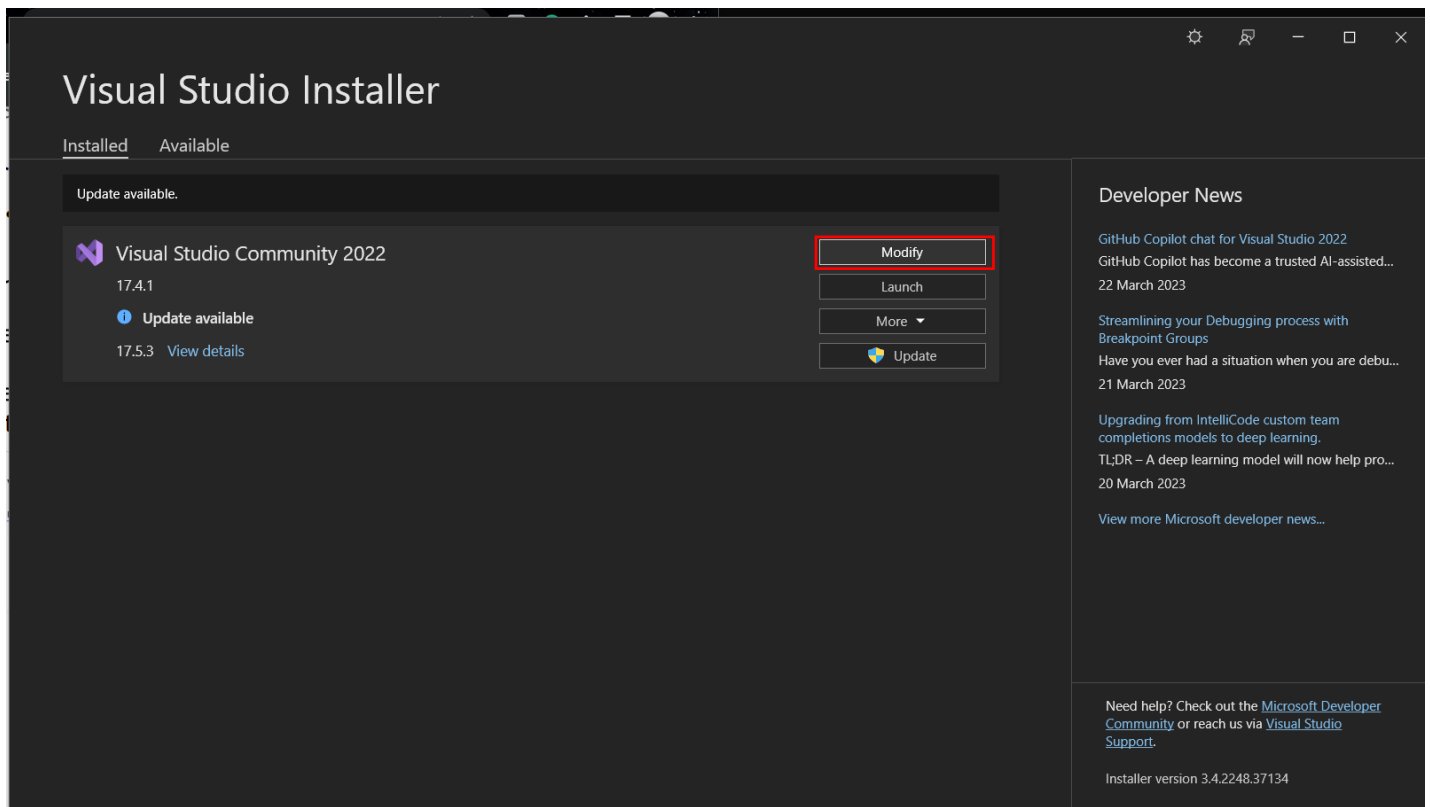
Information for calibration:

- Please wait for calibration to start. A black screen with instructions will show.
- Dots will show to guide your face or hand.
- Hold your hand or face at the position whilst a dot flashes.
- Don't move too far – you should feel comfortable and still be able to see the instructions on the screen.
- Use the 'ESC' key on your keyboard to exit calibration whilst it is running.

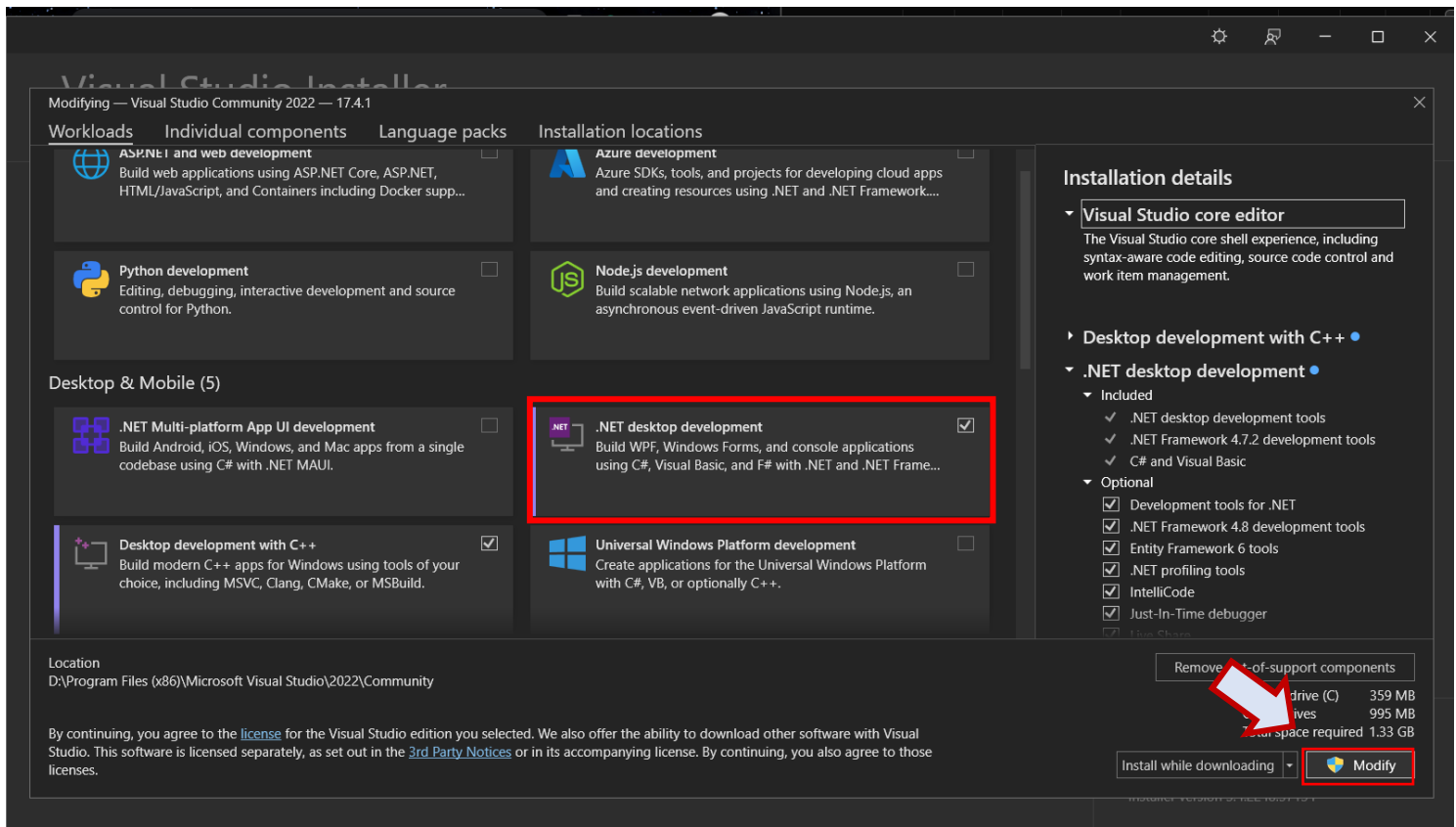
To Run UCL FISECARE in DEBUG mode

Step 5: Install [Microsoft Visual Studio](#) version 17.0 or later.

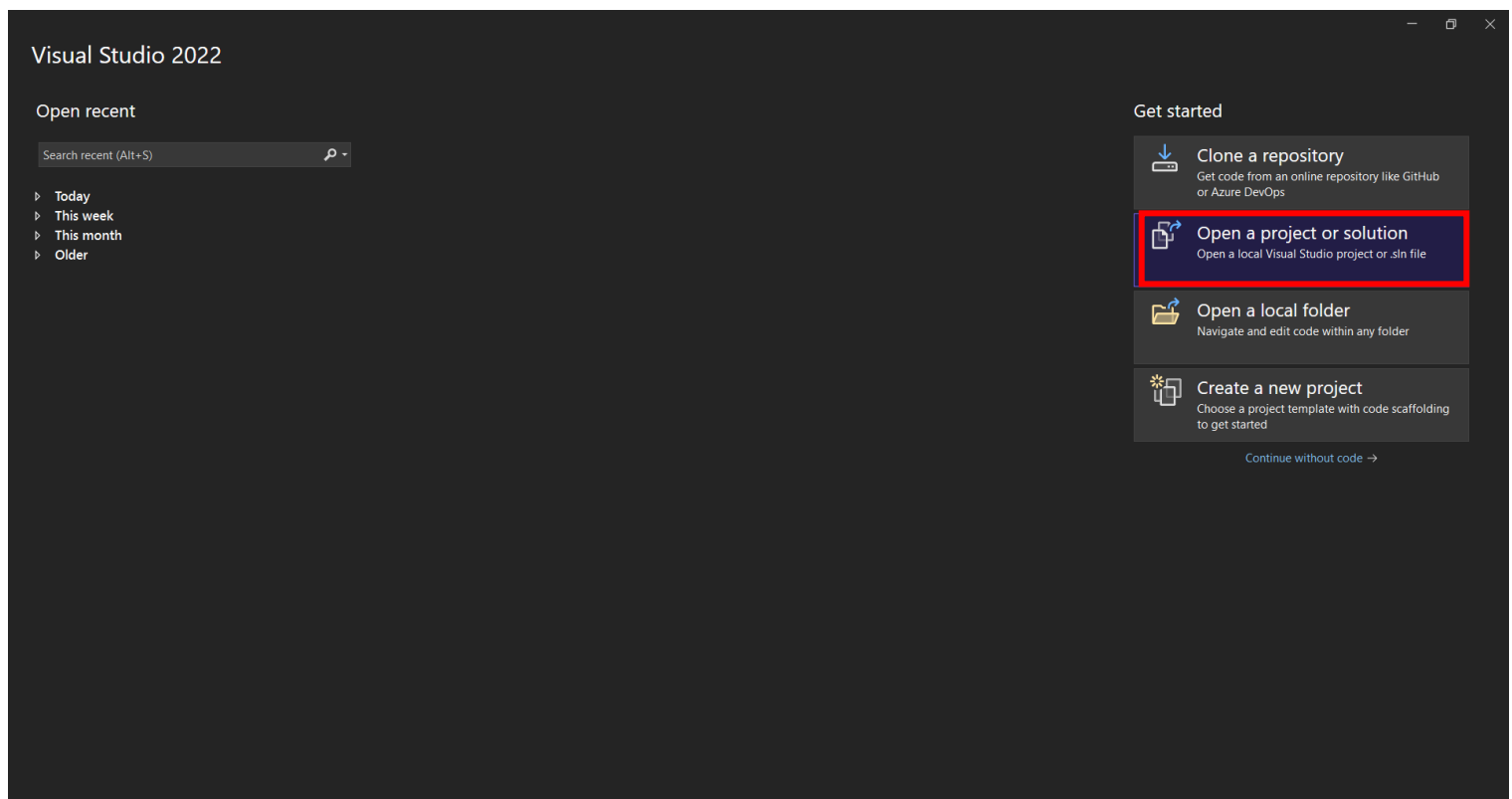
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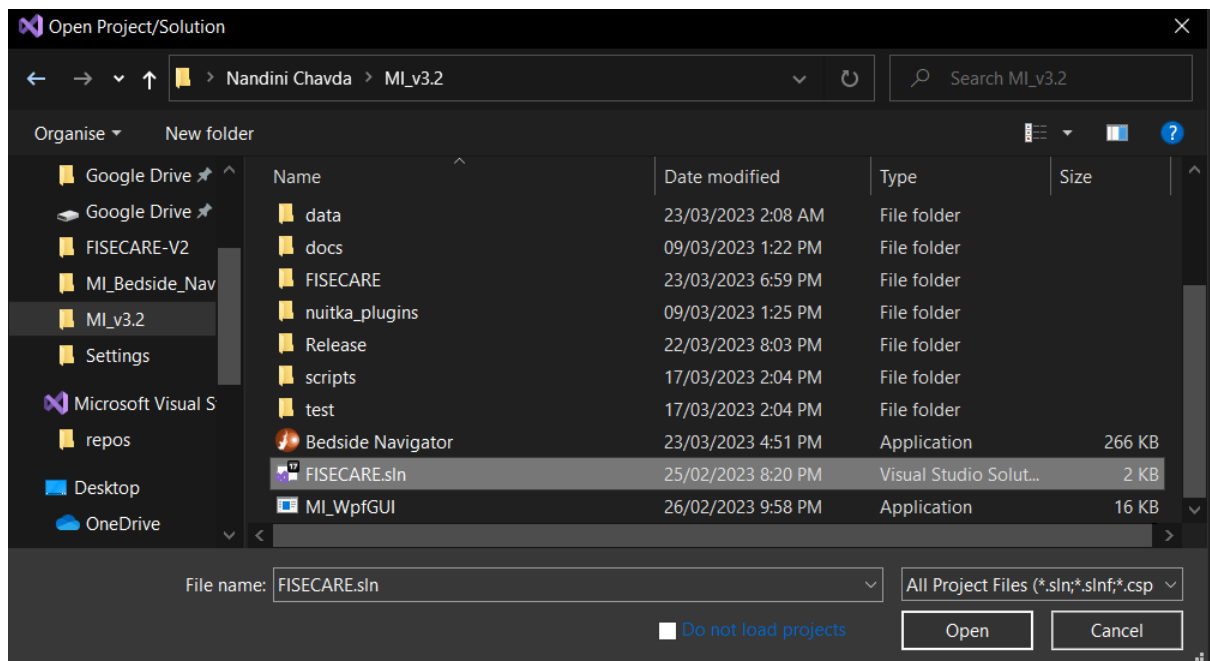
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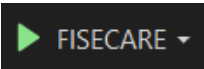


Step 9: Launch Visual Studio and click on **Open a project or solution** button.



Step 6: Open **FISECARE.sln** in the downloaded folder, 'MI_v3.2'.



Step 7: Click  on the top to run UCL FISECARE.