# SMV Bee Dance Language Translator Installation Guide (Windows)
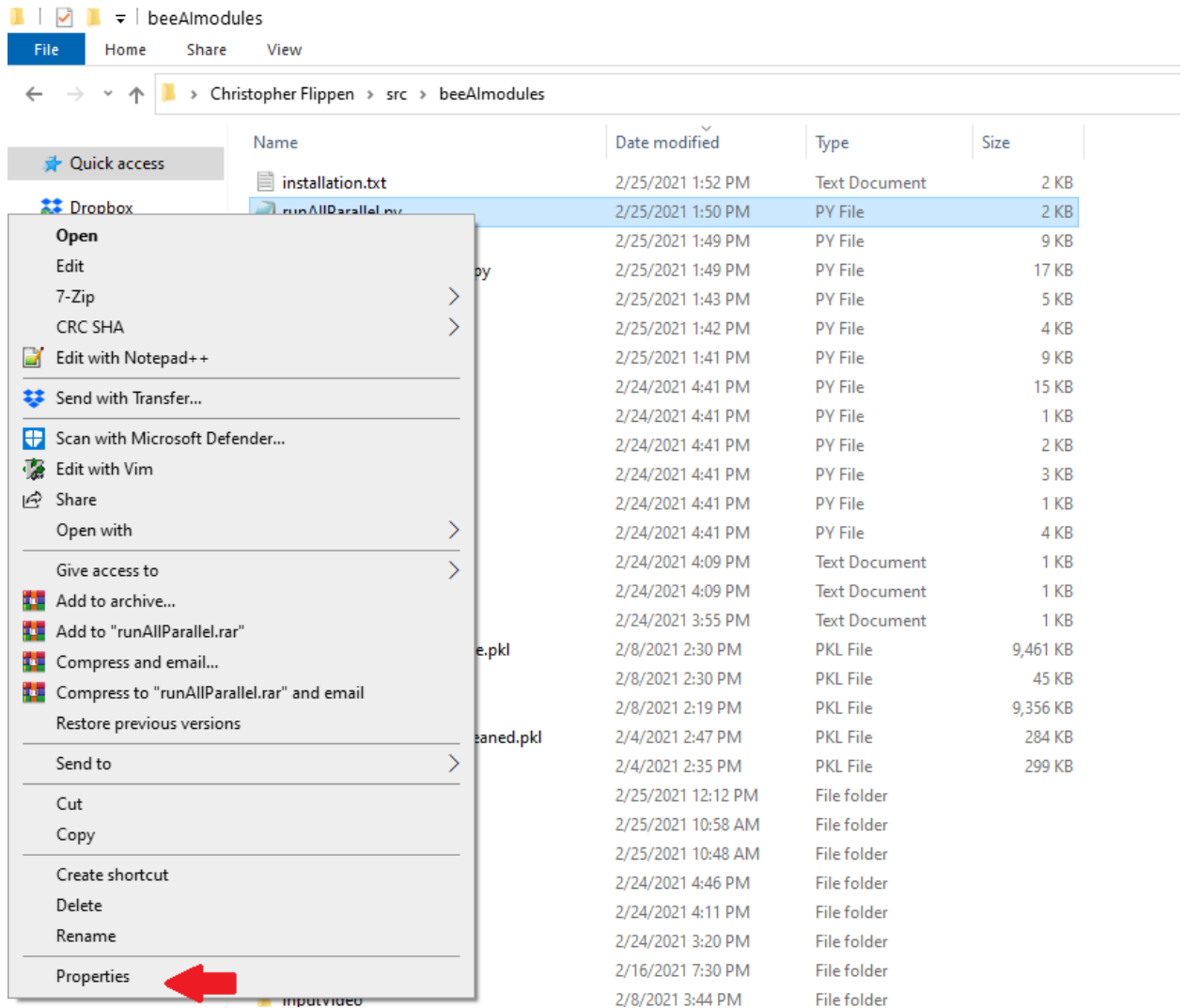
- The Bee Dance Translator is written in Python, so you will first need to install the latest version of Python if you haven't already. The latest version of Python can be found at the following link: https://www.python.org/downloads/


- When installation Python, you can use the default/recommended settings and it doesn't matter where you save the Python installation. After installing Python, restarting your computer may be necessary to make sure everything is set up correctly.
- One Python is installed, you can download the source code from the Bee Dance Language Translator Github found at: https://github.com/VCU-CS-Capstone/CS-21-303-SMV-Honey-Bee-Dance-Language-Translator
- You can either clone the repository if you are using Git or just download the code as a zip file
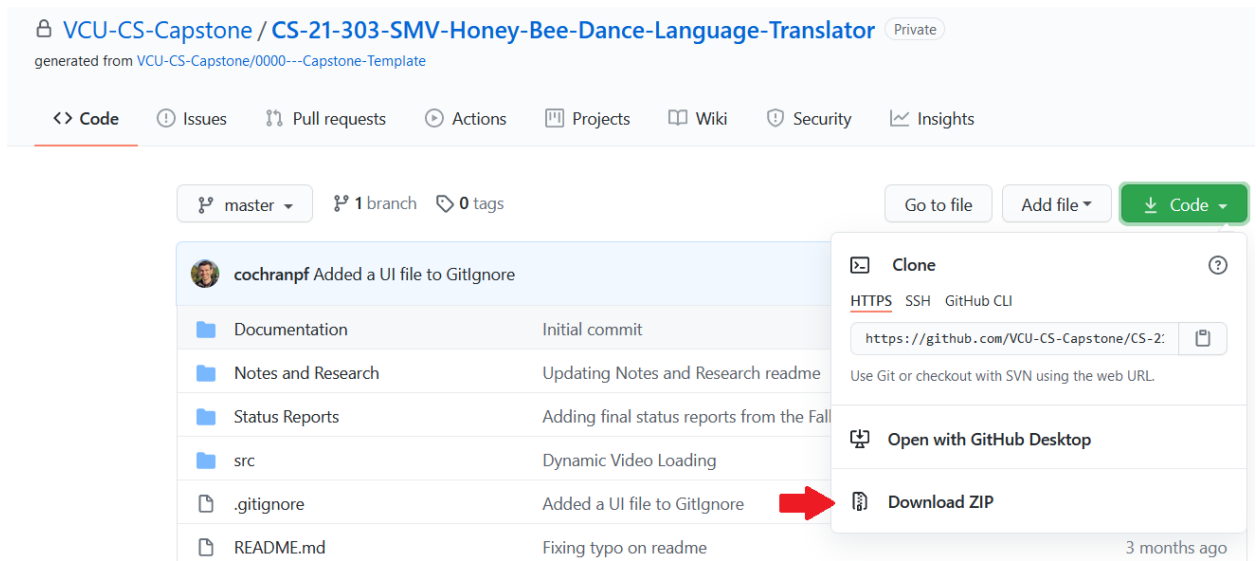
- Unzip the folder and put it somewhere where you can find it easily. Using the program will require typing in the file path to where you have the program saved. To check the file path, go to where you saved the program in file explorer, enter the beeModules folder inside of src. Right click on the runAllParallel.py file, and click properties

Name	Date modified	Type	Size
installation.txt	2/25/2021 1:52 PM	Text Document	2 KB
runAllParallel.py	2/25/2021 1:50 PM	PY File	2 KB
	2/25/2021 1:49 PM	PY File	9 KB
	2/25/2021 1:49 PM	PY File	17 KB
	2/25/2021 1:43 PM	PY File	5 KB
	2/25/2021 1:42 PM	PY File	4 KB
	2/25/2021 1:41 PM	PY File	9 KB
	2/24/2021 4:41 PM	PY File	15 KB
	2/24/2021 4:41 PM	PY File	1 KB
	2/24/2021 4:41 PM	PY File	2 KB
	2/24/2021 4:41 PM	PY File	3 KB
	2/24/2021 4:41 PM	PY File	1 KB
	2/24/2021 4:41 PM	PY File	4 KB
	2/24/2021 4:09 PM	Text Document	1 KB
	2/24/2021 4:09 PM	Text Document	1 KB
	2/24/2021 3:55 PM	Text Document	1 KB
e.pkl	2/8/2021 2:30 PM	PKL File	9,461 KB
	2/8/2021 2:30 PM	PKL File	45 KB
	2/8/2021 2:19 PM	PKL File	9,356 KB
eaned.pkl	2/4/2021 2:47 PM	PKL File	284 KB
	2/4/2021 2:35 PM	PKL File	299 KB
	2/25/2021 12:12 PM	File folder	
	2/25/2021 10:58 AM	File folder	
	2/25/2021 10:48 AM	File folder	
	2/24/2021 4:46 PM	File folder	
	2/24/2021 4:11 PM	File folder	
	2/24/2021 3:20 PM	File folder	
	2/16/2021 7:30 PM	File folder	
inputvideo	2/8/2021 3:44 PM	File folder	

Context menu options: Open, Edit, 7-Zip, CRC SHA, Edit with Notepad++, Send with Transfer..., Scan with Microsoft Defender..., Edit with Vim, Share, Open with, Give access to, Add to archive..., Add to "runAllParallel.rar", Compress and email..., Compress to "runAllParallel.rar" and email, Restore previous versions, Send to, Cut, Copy, Create shortcut, Delete, Rename, Properties

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- The box that opens when you click 'Properties' will show the file path that the program uses. The file path in this example is 'C:\Users\18047\src\beeAImodules'. Copy this file path or write it down so that you can use it in one of the later steps
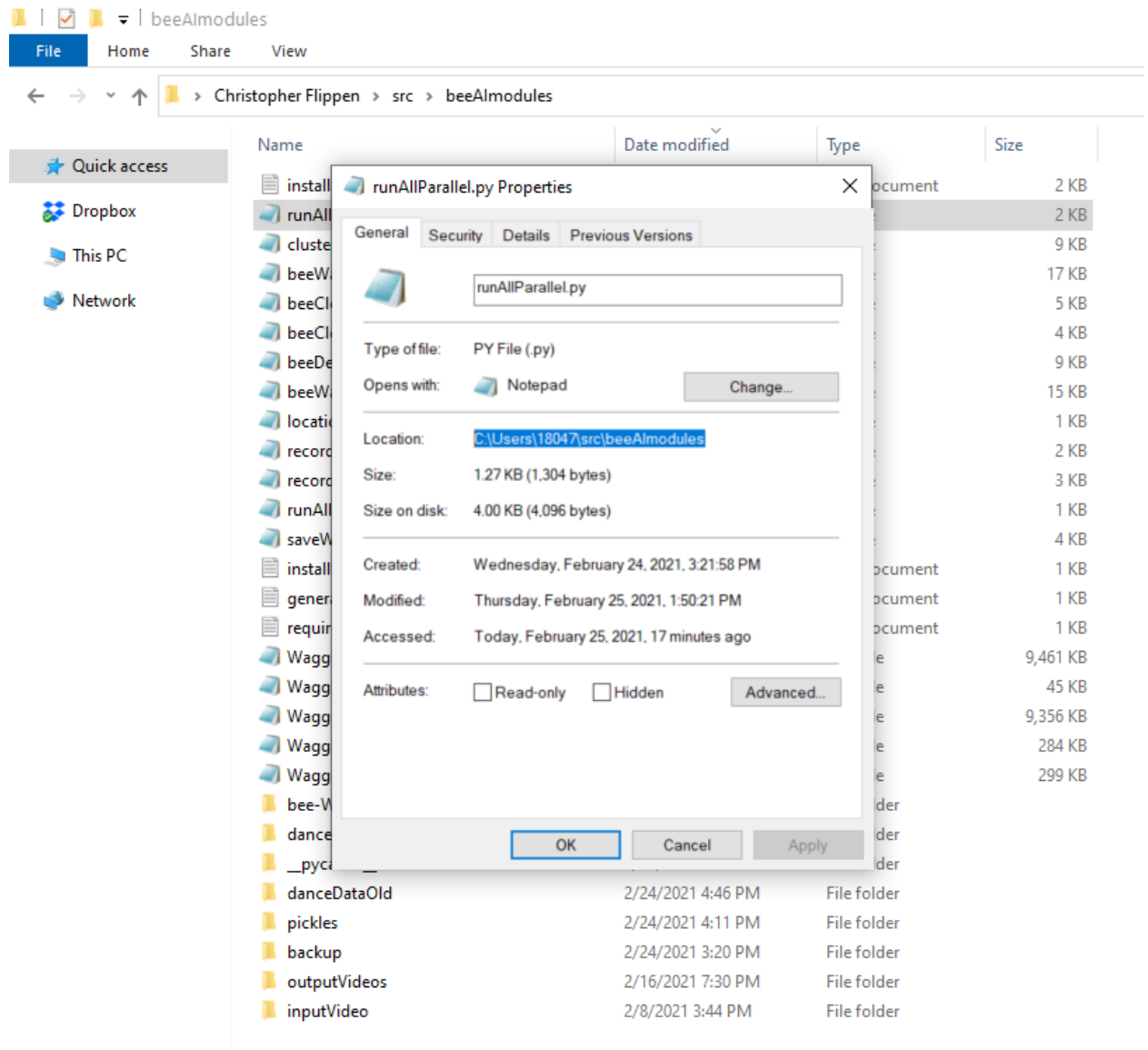
- Next, open up the command prompt on your computer. The default way to do this is to search 'cmd' in the windows search bar
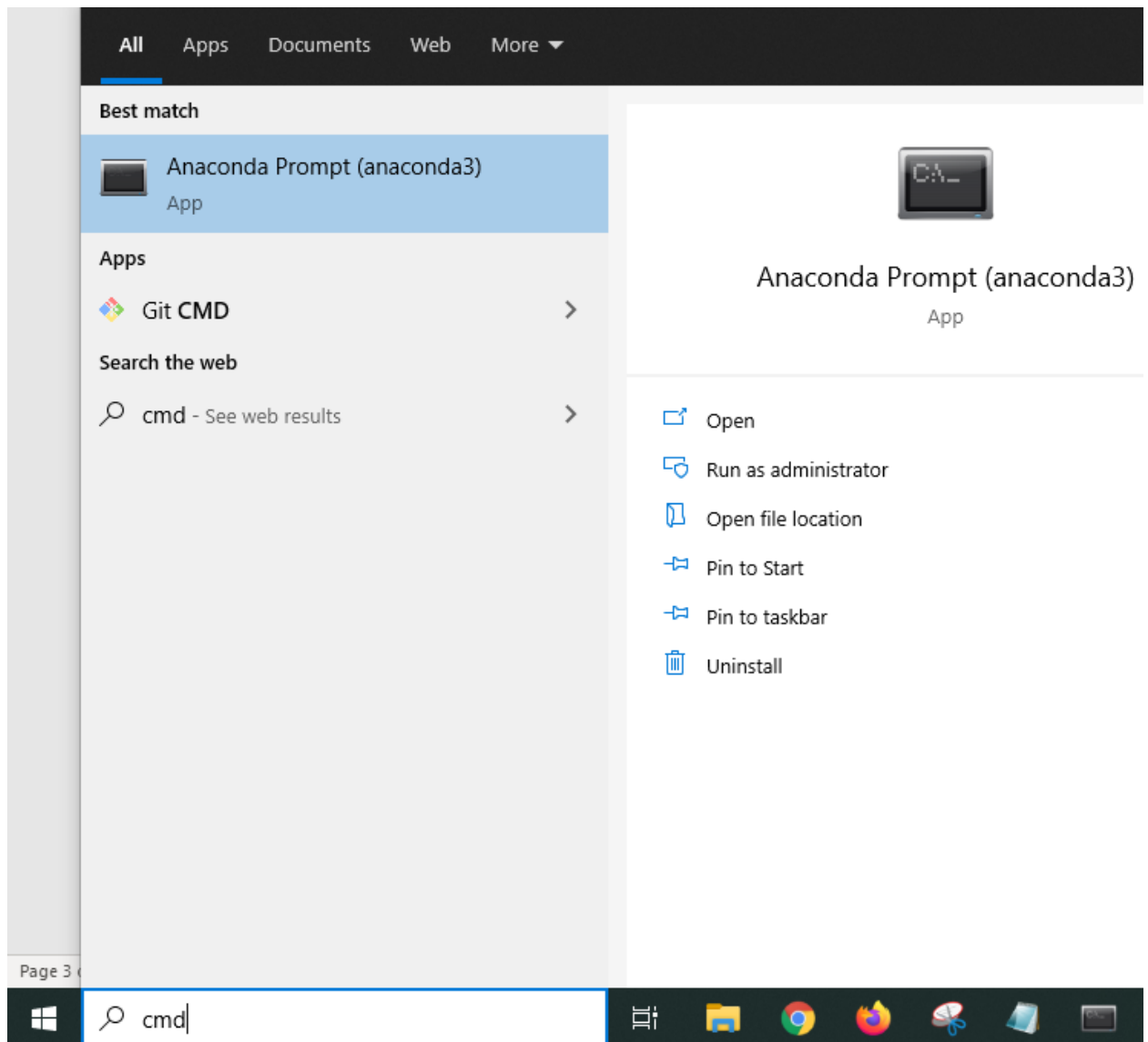
- Next, type the following commands into the command prompt, where PATH is the path
  name you copied before (so the command in this example is 'cd
  C:\Users\18047\src\beeAImodules'). Pasting text in command prompt is done with right
  click instead of CTRL V.

cd PATH
curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py
pip install -r requirements.txt

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Anaconda Prompt (anaconda3)                                                    —    □    ✕

(base) C:\Users\18047>cd C:\Users\18047\src\beeAImodules

(base) C:\Users\18047\src\beeAImodules>curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 1882k  100 1882k    0      0  5214k      0 --:--:-- --:--:-- --:--:-- 5214k

(base) C:\Users\18047\src\beeAImodules>pip install -r requirements.txt
Requirement already satisfied: numpy==1.19.2 in c:\users\18047\anaconda3\lib\site-packages (from -r requirements.txt (li
ne 1)) (1.19.2)
Requirement already satisfied: pandas==1.2.1 in c:\users\18047\anaconda3\lib\site-packages (from -r requirements.txt (li
ne 2)) (1.2.1)
Requirement already satisfied: wheel==0.36.2 in c:\users\18047\anaconda3\lib\site-packages (from -r requirements.txt (li
ne 3)) (0.36.2)
Requirement already satisfied: opencv_contrib_python==4.5.1.48 in c:\users\18047\anaconda3\lib\site-packages (from -r re
quirements.txt (line 4)) (4.5.1.48)
Requirement already satisfied: scipy==1.5.2 in c:\users\18047\anaconda3\lib\site-packages (from -r requirements.txt (lin
e 5)) (1.5.2)
Requirement already satisfied: pip==21.0.1 in c:\users\18047\anaconda3\lib\site-packages (from -r requirements.txt (line
 6)) (21.0.1)
Requirement already satisfied: scikit_learn==0.24.1 in c:\users\18047\anaconda3\lib\site-packages (from -r requirements.
txt (line 7)) (0.24.1)
Requirement already satisfied: python-dateutil>=2.7.3 in c:\users\18047\anaconda3\lib\site-packages (from pandas==1.2.1-
>-r requirements.txt (line 2)) (2.8.1)
Requirement already satisfied: pytz>=2017.3 in c:\users\18047\anaconda3\lib\site-packages (from pandas==1.2.1->-r requir
ements.txt (line 2)) (2020.5)
Requirement already satisfied: threadpoolctl>=2.0.0 in c:\users\18047\anaconda3\lib\site-packages (from scikit_learn==0.
24.1->-r requirements.txt (line 7)) (2.1.0)
Requirement already satisfied: joblib>=0.11 in c:\users\18047\anaconda3\lib\site-packages (from scikit_learn==0.24.1->-r
 requirements.txt (line 7)) (1.0.0)
Requirement already satisfied: six>=1.5 in c:\users\18047\anaconda3\lib\site-packages (from python-dateutil>=2.7.3->pand
as==1.2.1->-r requirements.txt (line 2)) (1.15.0)

(base) C:\Users\18047\src\beeAImodules>
```
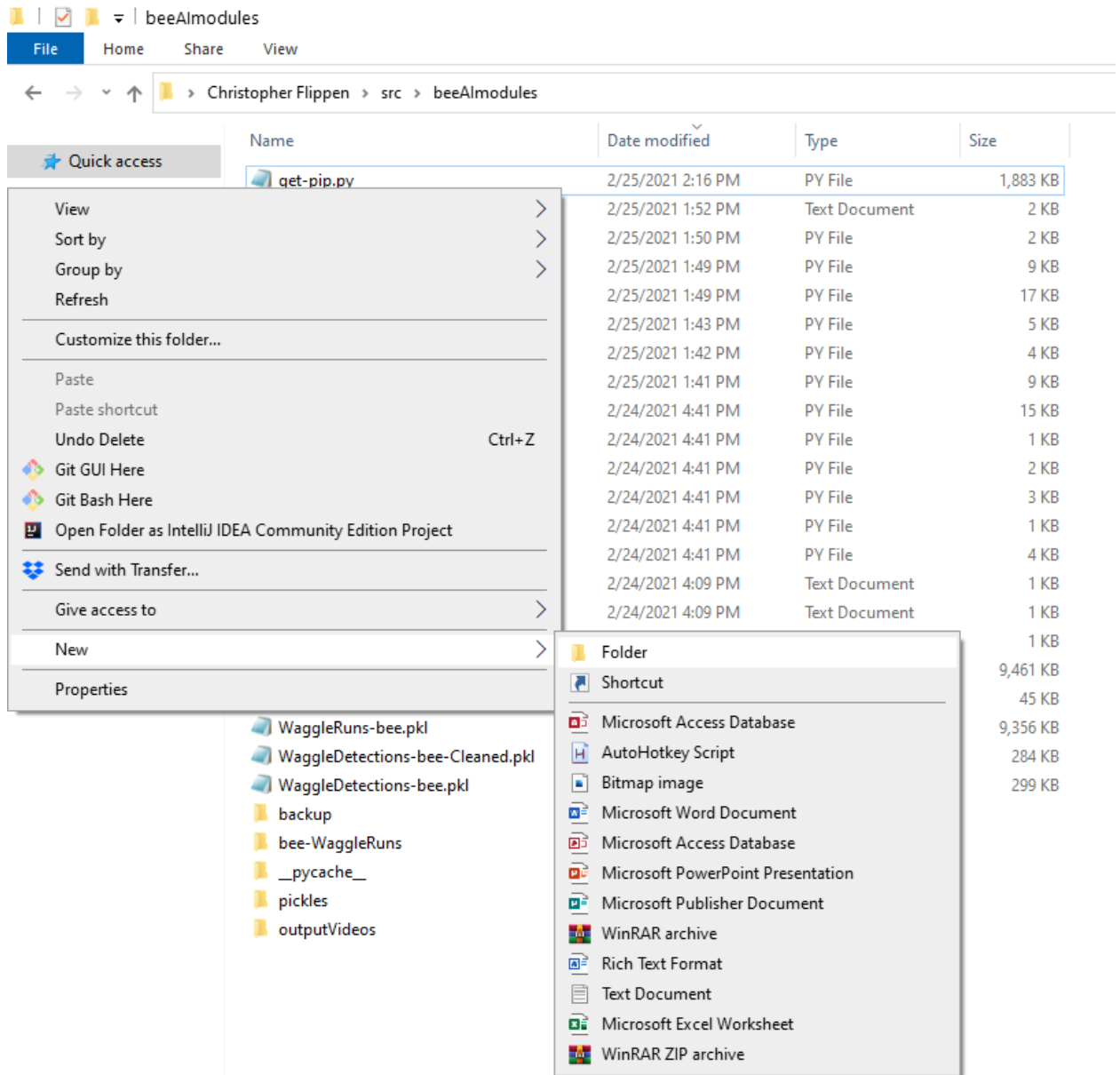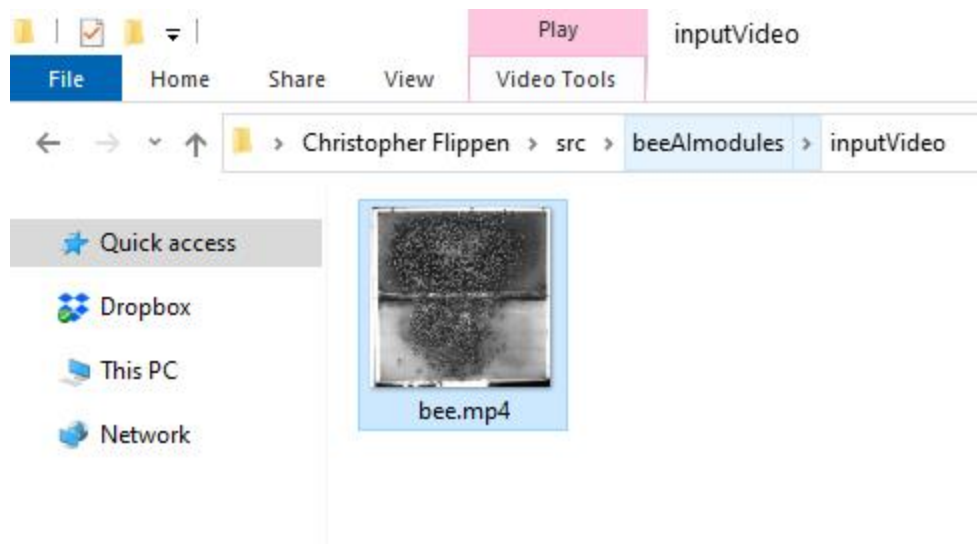
- Now the external Python packages needed for the program are installed and we can use the program to process a bee video.
- Inside the beeAImodules folder from before, create a folder to store the video and put the video file in it. In this example, we will call the folder 'inputVideo' and the video 'bee.mp4'

Name	Date modified	Type	Size
get-pip.py	2/25/2021 2:16 PM	PY File	1,883 KB
	2/25/2021 1:52 PM	Text Document	2 KB
	2/25/2021 1:50 PM	PY File	2 KB
	2/25/2021 1:49 PM	PY File	9 KB
	2/25/2021 1:49 PM	PY File	17 KB
	2/25/2021 1:43 PM	PY File	5 KB
	2/25/2021 1:42 PM	PY File	4 KB
	2/25/2021 1:41 PM	PY File	9 KB
	2/24/2021 4:41 PM	PY File	15 KB
	2/24/2021 4:41 PM	PY File	1 KB
	2/24/2021 4:41 PM	PY File	2 KB
	2/24/2021 4:41 PM	PY File	3 KB
	2/24/2021 4:41 PM	PY File	1 KB
	2/24/2021 4:41 PM	PY File	4 KB
	2/24/2021 4:09 PM	Text Document	1 KB
	2/24/2021 4:09 PM	Text Document	1 KB
			1 KB
			9,461 KB
			45 KB
WaggleRuns-bee.pkl			9,356 KB
WaggleDetections-bee-Cleaned.pkl			284 KB
WaggleDetections-bee.pkl			299 KB
backup			
bee-WaggleRuns			
__pycache__			
pickles			
outputVideos			

Quick access

Context menu:

- View
- Sort by
- Group by
- Refresh
- Customize this folder...
- Paste
- Paste shortcut
- Undo Delete   Ctrl+Z
- Git GUI Here
- Git Bash Here
- Open Folder as IntelliJ IDEA Community Edition Project
- Send with Transfer...
- Give access to
- New
- Properties

New submenu:

- Folder
- Shortcut
- Microsoft Access Database
- AutoHotkey Script
- Bitmap image
- Microsoft Word Document
- Microsoft Access Database
- Microsoft PowerPoint Presentation
- Microsoft Publisher Document
- WinRAR archive
- Rich Text Format
- Text Document
- Microsoft Excel Worksheet
- WinRAR ZIP archive

- Now that we have our bee video in the correct location, we can run the program to process it. Once again open command prompt and enter the following commands where PATH is the file path to where the program is and VIDEONAME is the name of your video file and FOLDERNAME is the folder you stored the video in (so in this example, the second command looks like: 'py runAllParallel.py inputVideo/bee.mp4'.

cd PATH
py runAllParallel.py FOLDERNAME/VIDEONAME

- When the program begins, it should display a message saying 'Beginning detectBees with file: [your file name]'. The program can take a while (over an hour) to run due to the amount of image processing required and you can quit the program while it is running by pressing CTRL+C and a message saying 'KeyboardInterrupt' should appear.

- Once the program finishes, it will save video clips of any bee waggle dances it found to the outputVideo folder located within beeAImodules and it will save additional data to the UI component of the app.