FULKU

FOREST UTILISATION LABORATORY, KYOTO UNIVERSITY

How to operate turnover_sensor in computer Clethra (R0.33)

Laboratory Analytical Procedure (LAP)

パソコンクレスラでの turnover_sensor の操作方法 (R3)

実験室分析手順

Issue Date: January 2025

発行日：2025 年 1 月

Users: Eriko KITA, Yumi KIHARA, Shitephen WANG, Masako DANNOURA

FULKU is a laboratory based on Graduate school of Agriculture, Kyoto University.

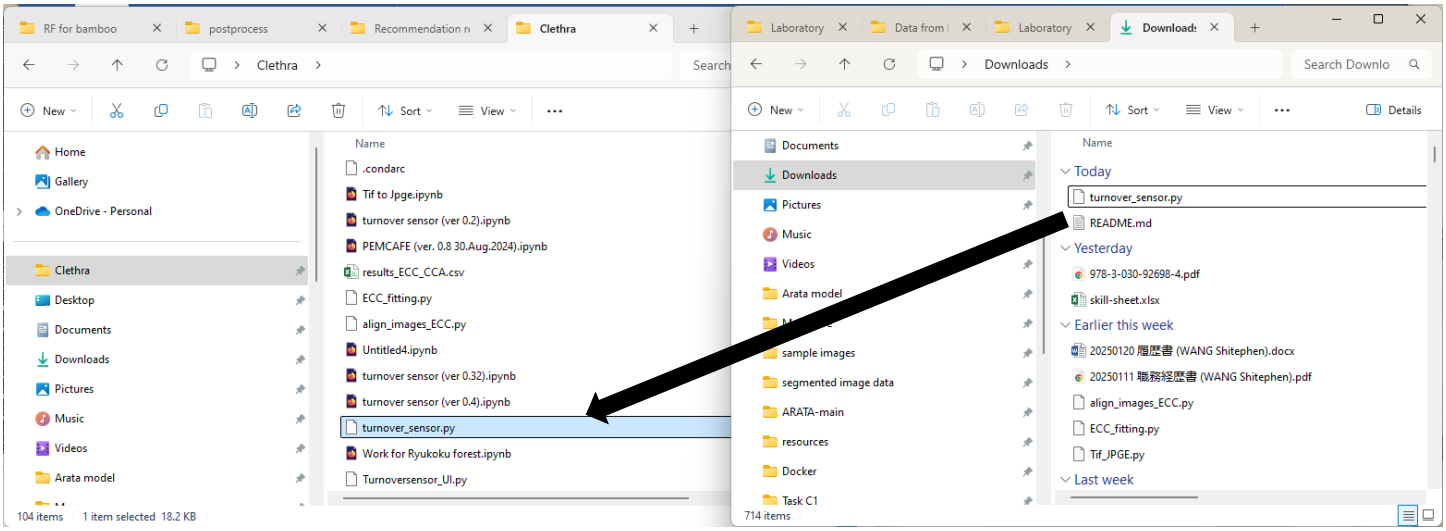
Technical Report

Procedure Title: How to operate turnover_sensor in computer Clethra (R3)

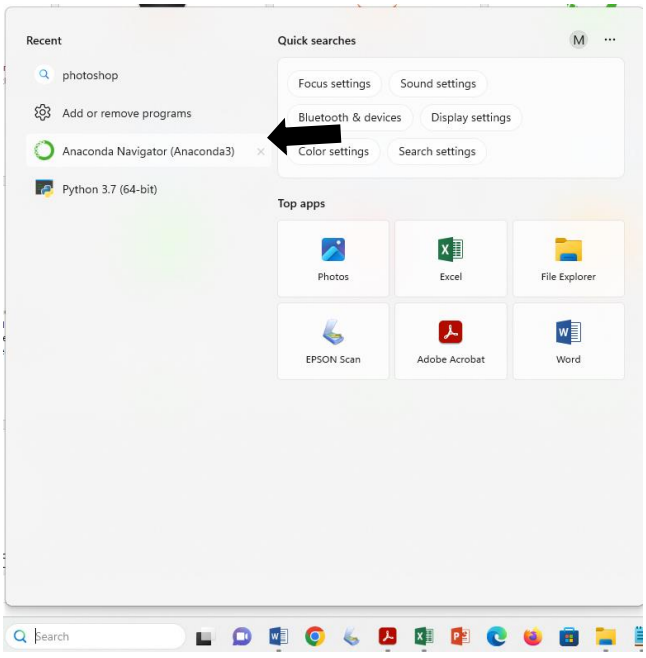
Laboratory Analytical Procedure (LAP)

0. Move the “turnover_sensor.py” file in the root folder (Clethra)

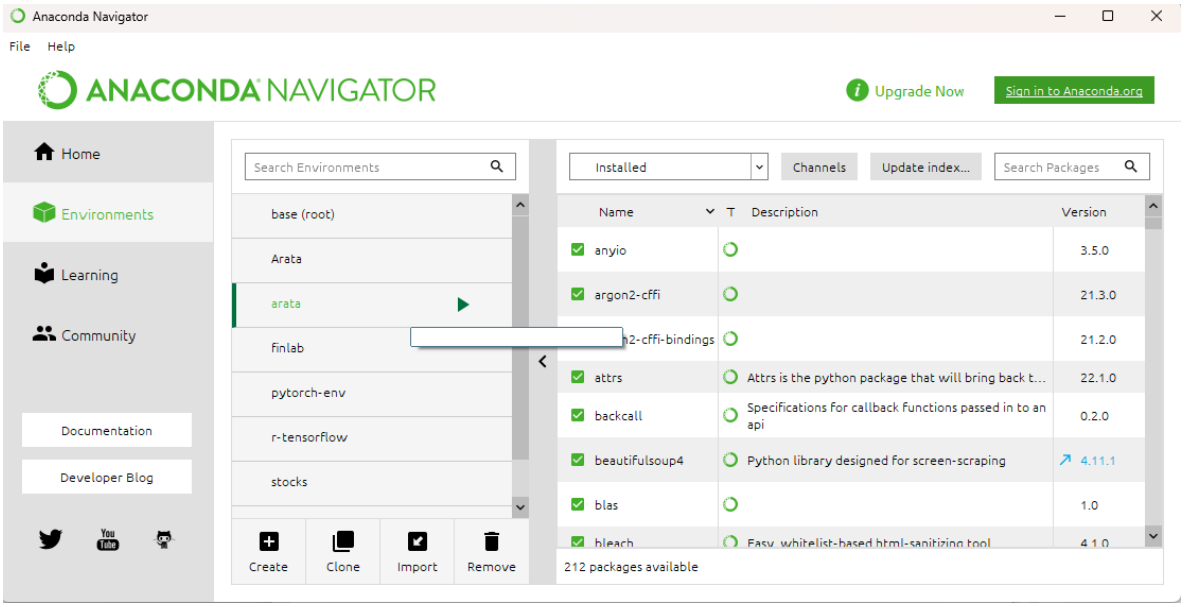
(preset here in our lab → "C:\Users\Clethra")



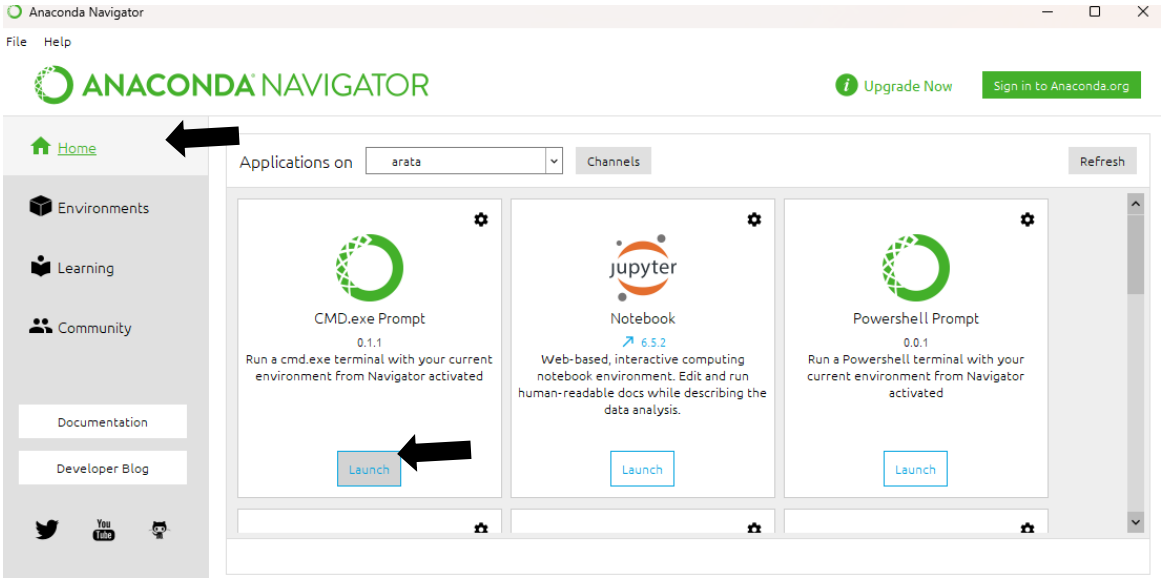
1. open Anaconda Navigator



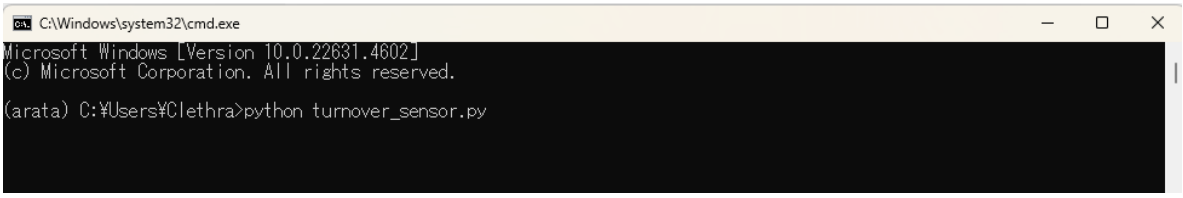
2. Chose the “arata” in Environments



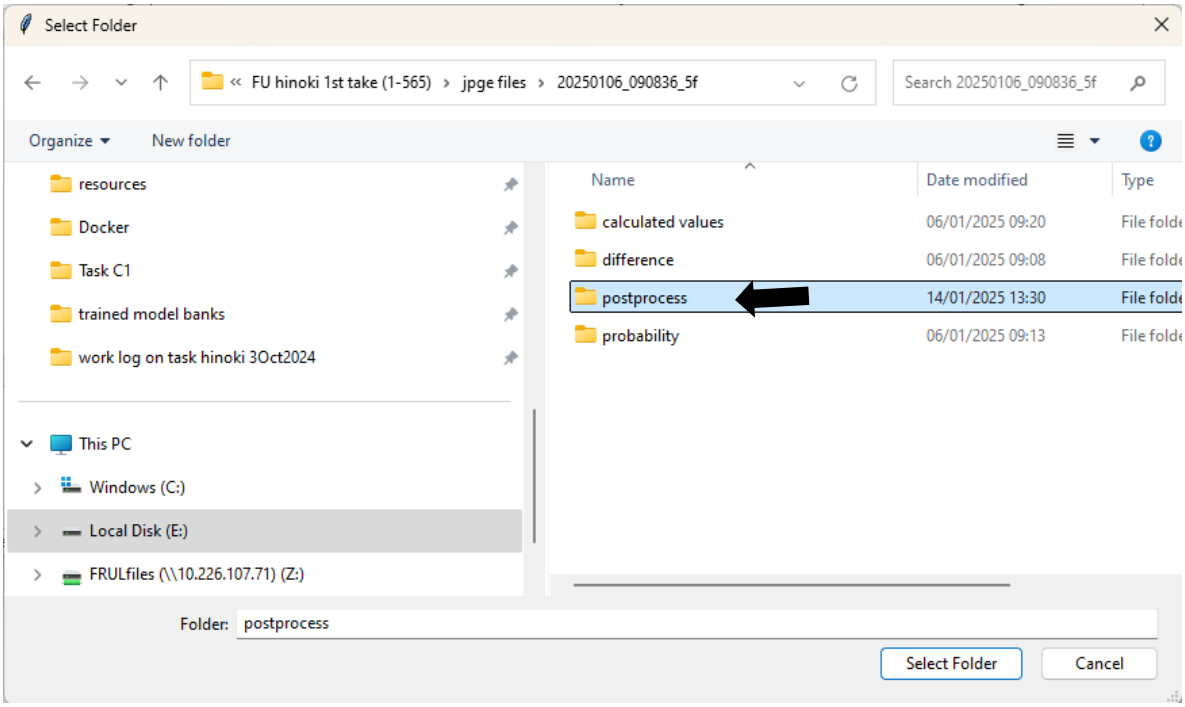
3. Go “home” and launch CDM.exe Prompt



4. Type “python turnover_sensor.py” in cdm.exe and press enter



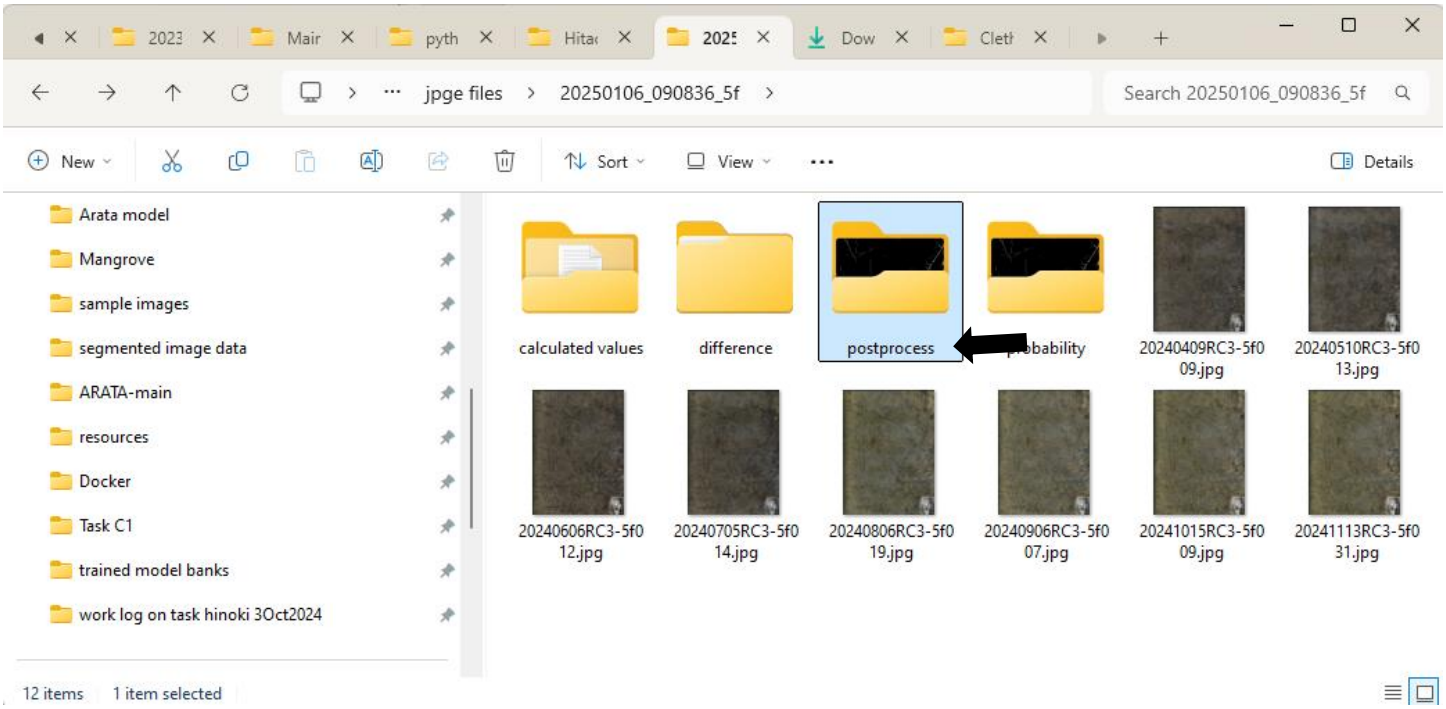
5. Select Folder (e.g. postprocess generated from ARATA)

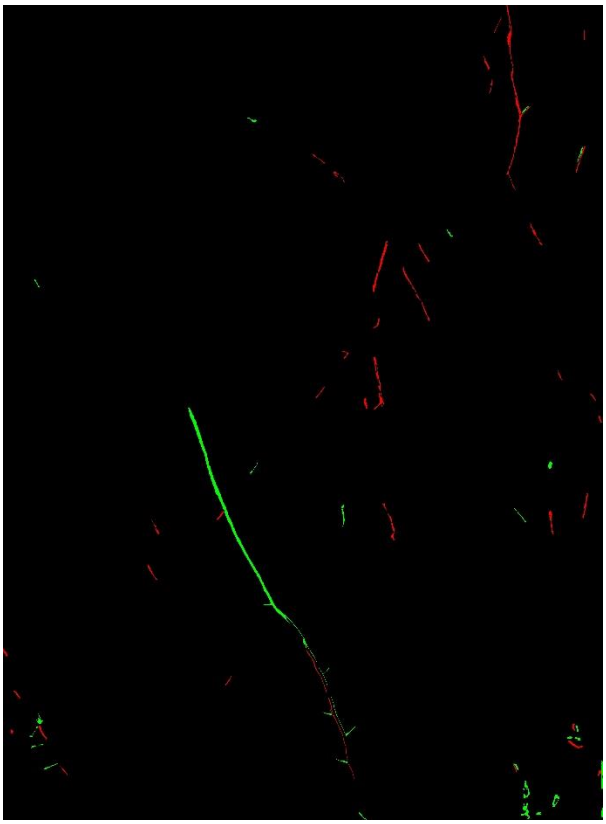


6. Start to align images

6. Start to fitting images

7. Pick up the result in the pathway you set




Green is root growth; Red is root decomposed

Note:

1. If you have some error happened, it is good to ask ChatGPT first (e.g. the image sizes are different and the ARATA cannot output calculated values. ChatGPT will recommend you to remove images with different sizes)

2. If you want to know more details about the model, original source codes here https://github.com/gn03138868/turnover-sensor
3. If you still have some questions, you can ask Shitephen (gn03138868@gmail.com) via email
4. You can upgrade any packages and versions. It is just a small tool, easy to revise. (I developed it under the environment of ARATA.)

Python 3.7.16 (default, Jan 17 2023, 16:06:28) [MSC v.1916 64 bit (AMD64)]

Packages in python	Version
absl-py	1.4.0
anyio	3.5.0
argon2-cffi	21.3.0
argon2-cffi-bindings	21.2.0
astunparse	1.6.3
attrs	22.1.0
backcall	0.2.0
beautifulsoup4	4.11.1
bleach	4.1.0
brotlipy	0.7.0
cachetools	5.3.0
certifi	2022.12.7
cffi	1.15.1
charset-normalizer	3.1.0
colorama	0.4.6
cryptography	37.0.4
cuda-python	11.7.1
cvxopt	1.3.0
cycler	0.11.0
debugpy	1.5.1
decorator	5.1.1
defusedxml	0.7.1
entrypoints	0.4
ExifRead	3.0.0
fastjsonschema	2.16.2
flatbuffers	23.1.21
flit_core	3.6.0
fonttools	4.38.0
gast	0.4.0
google-auth	2.16.2
google-auth-oauthlib	0.4.6
google-pasta	0.2.0
grpcio	1.51.3
idna	3.4
importlib-metadata	6.0.0

importlib-resources 5.2.0
ipykernel 6.15.2
ipython 7.31.1
ipython-genutils 0.2.0
jedi 0.18.1
Jinja2 3.1.2
jsonschema 4.17.3
jupyter_client 7.4.9
jupyter_core 4.11.2
jupyter-server 1.23.4
jupyterlab-pygments 0.1.2
keras 2.11.0
kiwisolver 1.4.4
libclang 15.0.6.1
llvmlite 0.39.1
lxml 4.9.1
Markdown 3.4.1
MarkupSafe 2.1.1
matplotlib 3.5.3
matplotlib-inline 0.1.6
mistune 0.8.4
nbclassic 0.5.2
nbclient 0.5.13
nbconvert 6.5.4
nbformat 5.7.0
nest-asyncio 1.5.6
notebook 6.5.2
notebook_shim 0.2.2
numba 0.56.4
numpy 1.21.6
oauthlib 3.2.2
olefile 0.46
opt-einsum 3.3.0
packaging 22.0
pandas 1.3.5
pandocfilters 1.5.0
parso 0.8.3
patsy 0.5.3
pickleshare 0.7.5
Pillow 9.4.0
pip 22.3.1
pkgutil_resolve_name 1.3.10
prometheus-client 0.14.1
prompt-toolkit 3.0.36
protobuf 3.19.6

psutil 5.9.0
pyasn1 0.4.8
pyasn1-modules 0.2.8
pycparser 2.21
Pygments 2.11.2
pyOpenSSL 22.0.0
pyparsing 3.0.9
pyrsistent 0.18.0
PySocks 1.7.1
python-dateutil 2.8.2
pytz 2022.7.1
pywin32 305.1
pywinpty 2.0.10
pyzmq 23.2.0
requests 2.28.2
requests-oauthlib 1.3.1
rsa 4.9
scipy 1.7.3
Send2Trash 1.8.0
setuptools 65.6.3
six 1.16.0
sniffio 1.2.0
soupsieve 2.3.2.post1
statsmodels 0.13.5
tensorboard 2.11.2
tensorflow 2.11.0
tensorflow-estimator 2.11.0
tensorflow-intel 2.11.0
tensorflow-io-gcs-filesystem 0.31.0
termcolor 2.2.0
terminado 0.17.1
tinycss2 1.2.1
torch 1.13.1
torchaudio 0.12.0
torchvision 0.14.1
tornado 6.2
traitlets 5.7.1
typing_extensions 4.5.0
urllib3 1.26.15
wcwidth 0.2.5
webencodings 0.5.1
websocket-client 0.58.0
Werkzeug 2.2.3
wheel 0.38.4
win-inet-pton 1.1.0

wincertstore	0.2
zipp	3.11.0

5. Environment of User interface

Device name	Clethra
Processor	Intel(R) Core(TM) i5-9400F CPU @ 2.90GHz 2.90 GHz
Installed RAM	16.0 GB
Device ID	B9F0C10B-4FA8-4D0B-9098-9A621D5DA7E8
Product ID	00325-81309-17231-AAOEM
System type	64-bit operating system, x64-based processor
Pen and touch	No pen or touch input is available for this display

Edition	Windows 11 Home
Version	22H2
Installed on	01/03/2023
OS build	22621.1555
Experience	Windows Feature Experience Pack 1000.22640.1000.0