## User Guide

Chia-Hsiang Lin<sup>†</sup>, Man-Chun Chu, and Po-Wei Tang

October 10, 2023

Let us explain how to use the proposed CODE-MM algorithm for solving the mangrove mapping problem. Note that for the multispectral case, the mode is set to 0 (i.e., Mode=0), and for the hyperspectral case, the mode is set to 1 (i.e., Mode=1). Besides, specific prerequisites must be prepared in advance to compute  $x_{DE}$  using the Siamese network.

## Prerequisites (Tested by Python 3.6.13 and CUDA 11.1 under Windows OS)

- 1. Create a conda environment for obtaining  $x_{\rm DE}$ .
  - "conda create -n env python=3.6.13 -y"
  - " conda activate env "
- 2. Install all dependencies.
  - "pip install -r requirements.txt"

## Run the code

The "Demo.m" file demonstrates the implementation of the mangrove mapping process.

## Citation

If you find our work useful in your research or publication, please kindly cite our work:

```
• @article{lin2023codemm, title={CODE-MM: Convex Deep Mangrove Mapping Algorithm Based on Optical Satellite Images}, author={Lin, Chia-Hsiang and Chu, Man-Chun and Tang, Po-Wei}, journal={IEEE Transactions on Geoscience and Remote Sensing}, year={2023}, volume={61}, number={}, pages={1-19}, doi={10.1109/TGRS.2023.3314088}}
```

<sup>†</sup> Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan (R.O.C.) E-mail: chiahsiang.steven.lin@gmail.com. Web: https://sites.google.com/view/chiahsianglin/