

# Advancing Building Extraction in Thailand: Fine-tuning and Validation of YOLOv8 Segment Model on Open-source Data across Diverse Land Use Types

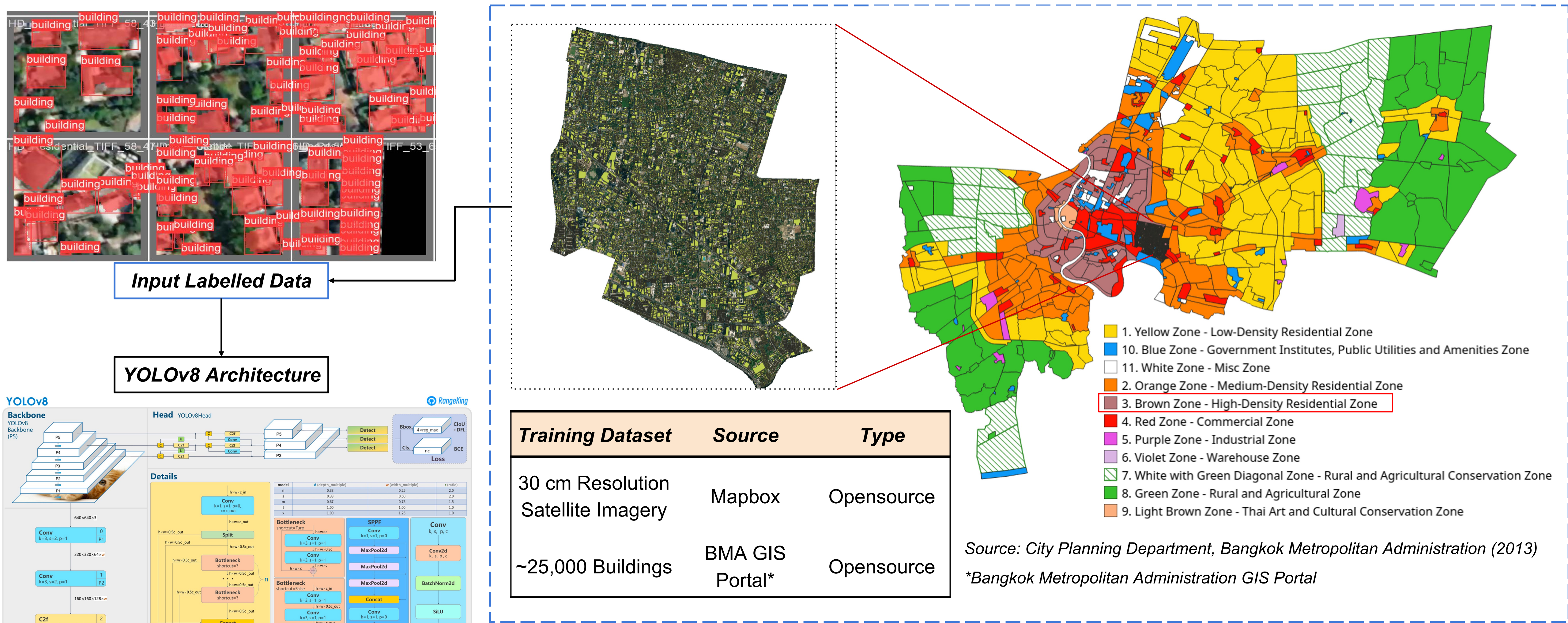
Bhanu Prasad CHINTAKINDI, Yoshiki OGAWA, Yoshihide SEKIMOTO

## Background and Objective

- Building extraction models are techniques that use computer vision and machine learning to automatically find and outline buildings in aerial or satellite images.
- Developing a global building extraction model is challenging due to building variations, limited data, processing scale, geographical variations, and the need for reliable ground truth data.
- This research work aims to validate the accuracy and robustness of the latest YOLOv8 model by leveraging the potential of opensource data, and fine-tuning across diverse land-use types.

## Methodology

### Fine tuning the YOLOv8 Segment Model at High-Density Residential Zone of Bangkok Province - Thailand



## Results



## Conclusion

- The YOLOv8 segmentation model has successfully extracted buildings in cases - 1, 2 and 3.
- In case - 4, some of the buildings were extracted poorly.
- The model performance depends on various factors like image quality, building diversity, occlusions, and training.
- In summary, YOLOv8 has a great potential for building extraction and accuracies can be enhanced by training and fine-tuning on diverse land-use types.