

Segment Anything Model (SAM): An Approach to Tree Segmentation in Urban Environments

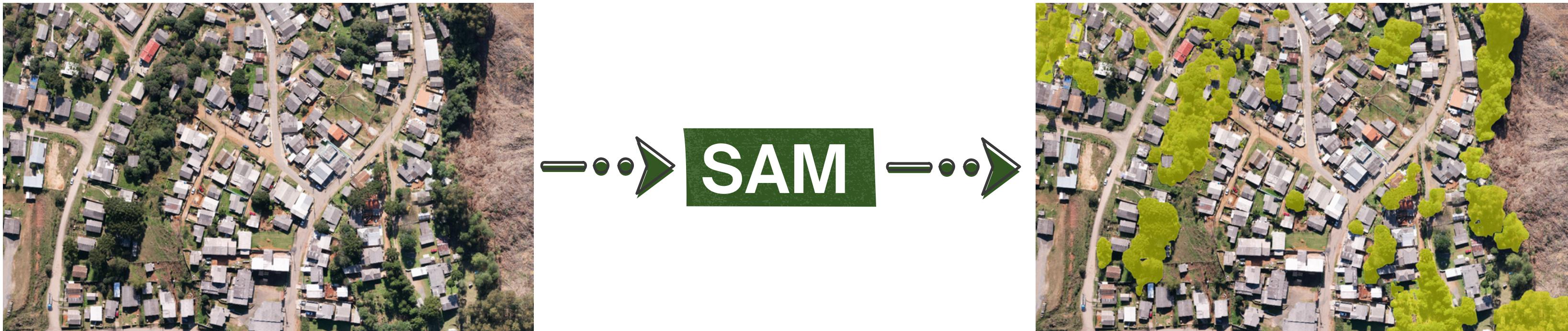
Cindy Fernandes Mendes¹, Sofia Morazzi Welter Soares¹, Henrique Genske Teodoro¹, Marcos Benedito Schimalski¹, Veraldo Liesenberg¹

¹Universidade do Estado de Santa Catarina (UDESC)

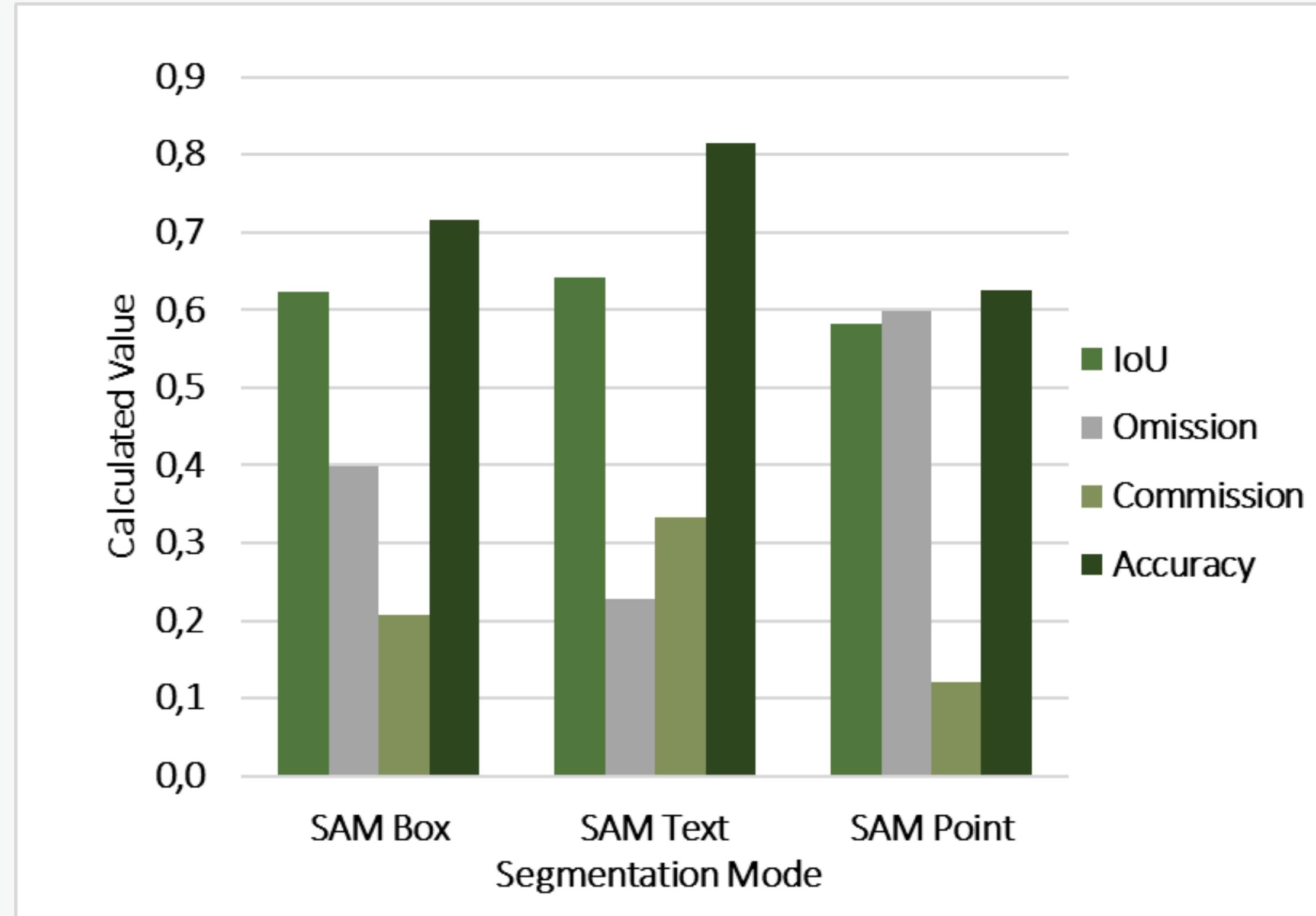
July 1st, 2025

Objective

- Evaluate the effectiveness of the Segment Anything Model (SAM) in segmenting urban trees from high-resolution drone imagery.

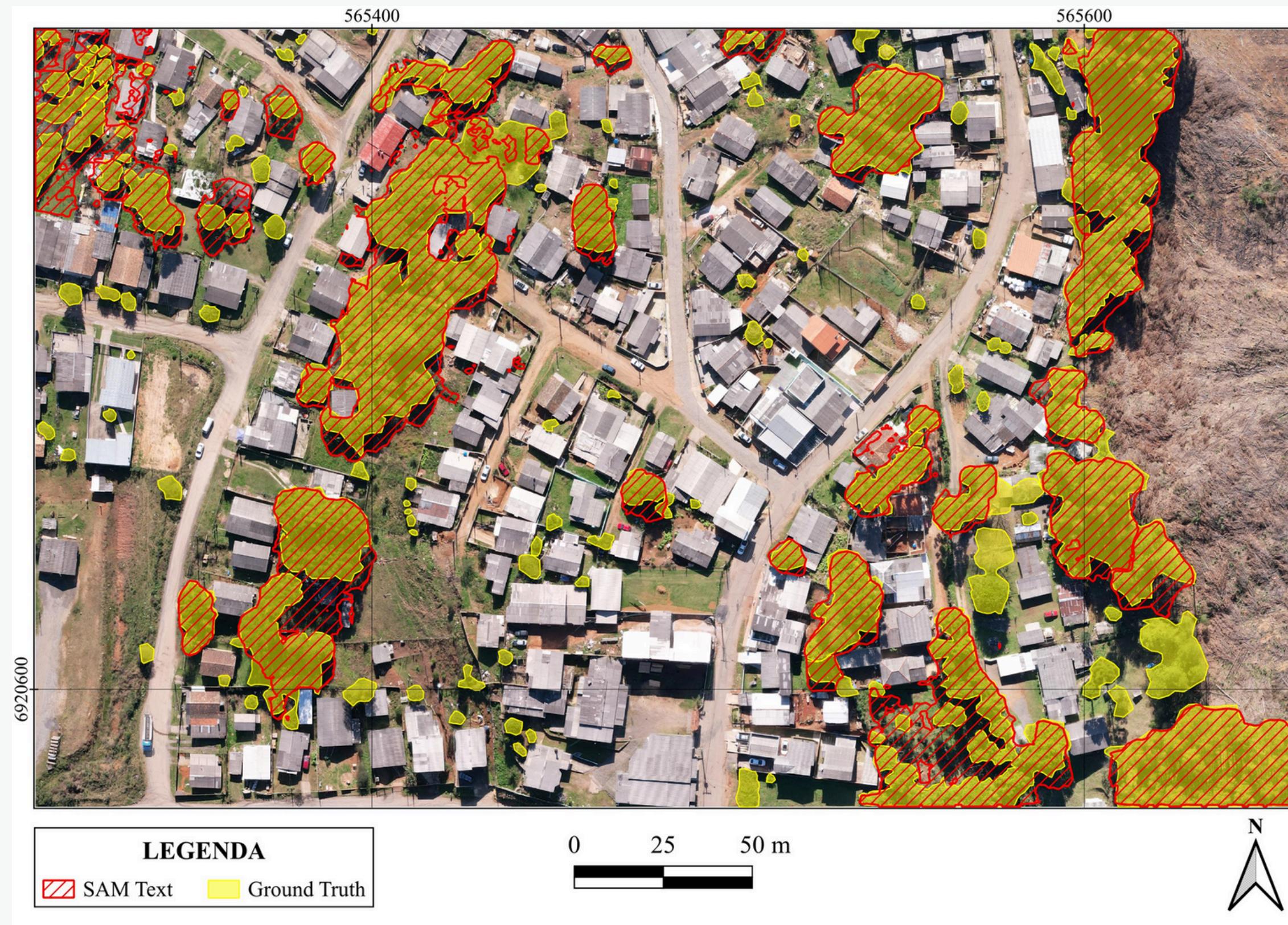


Results



- SAM Text: highest accuracy (>80%), commission (33%)
- SAM Point: lowest accuracy (63%), low commission error (12%), high omission (60%)
- SAM Box: intermediate performance (72% accuracy)
- All methods showed low IoU values (0.58 to 0.64)

Discussion



- SAM can accelerate urban vegetation mapping, especially in densely vegetated areas
- Results highlight challenges in heterogeneous urban environments
- Model adjustments may be necessary, such as more suitable prompts or fine-tuning

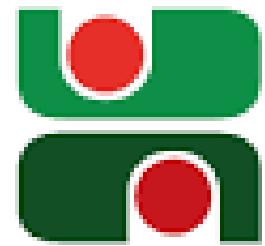
Next Steps

- SAM shows promising potential but requires adjustments for effective use in complex urban environments.
- Testing new prompt strategies
- Refining image pre-processing methods
- Exploring fine-tuning to improve performance in sparse vegetation areas

Thank you!



cindy.mendes@edu.udesc.br
(49) 98814-1708



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PROGRAMA DE PÓS-GRADUAÇÃO EM
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Symposium on
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