

Visão Computacional

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LABORATÓRIO
DE INTELIGÊNCIA
ARTIFICIAL

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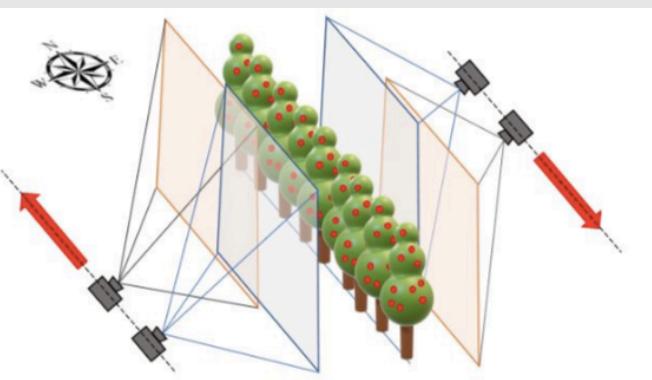
Visão Computacional

Uma das sub-áreas da Computação que estuda o processamento de imagens com o objetivo de fornecer às máquinas a capacidade de interpretar visualmente informações

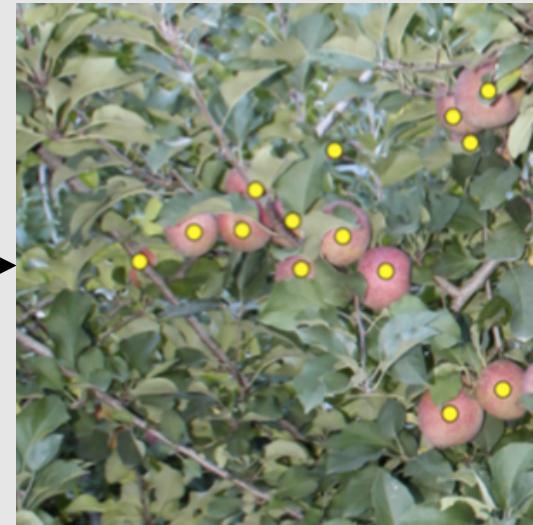
Em geral, automatizar com Inteligência Artificial tarefas que são realizadas de forma manual por um especialista.

Por exemplo: reconhecer doenças em plantações de soja em imagens capturadas por Drones.

Visão Computacional



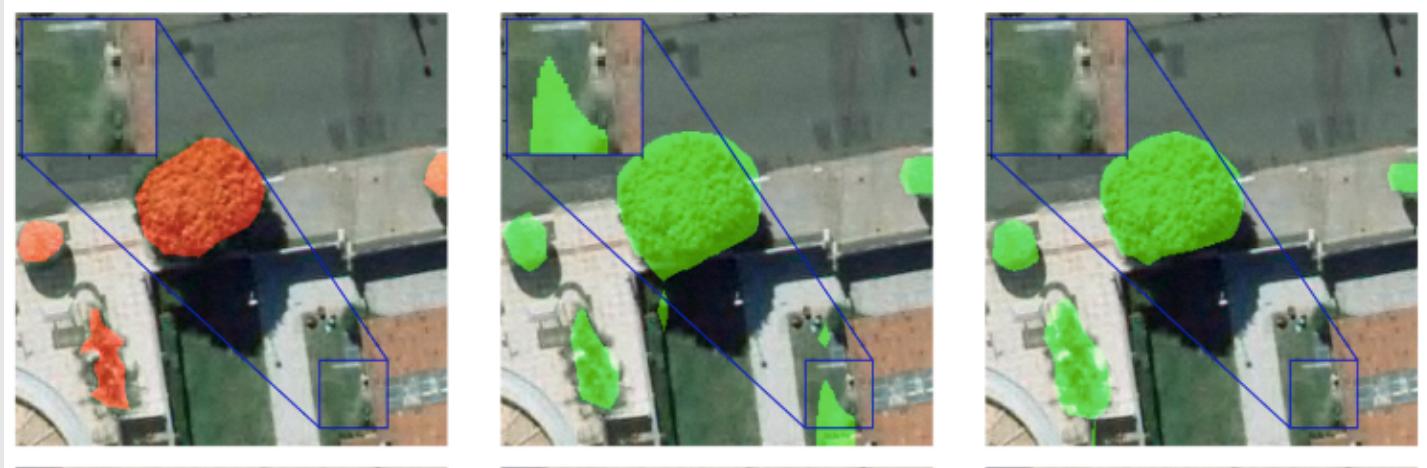
Método de Visão
Computacional



Projetos

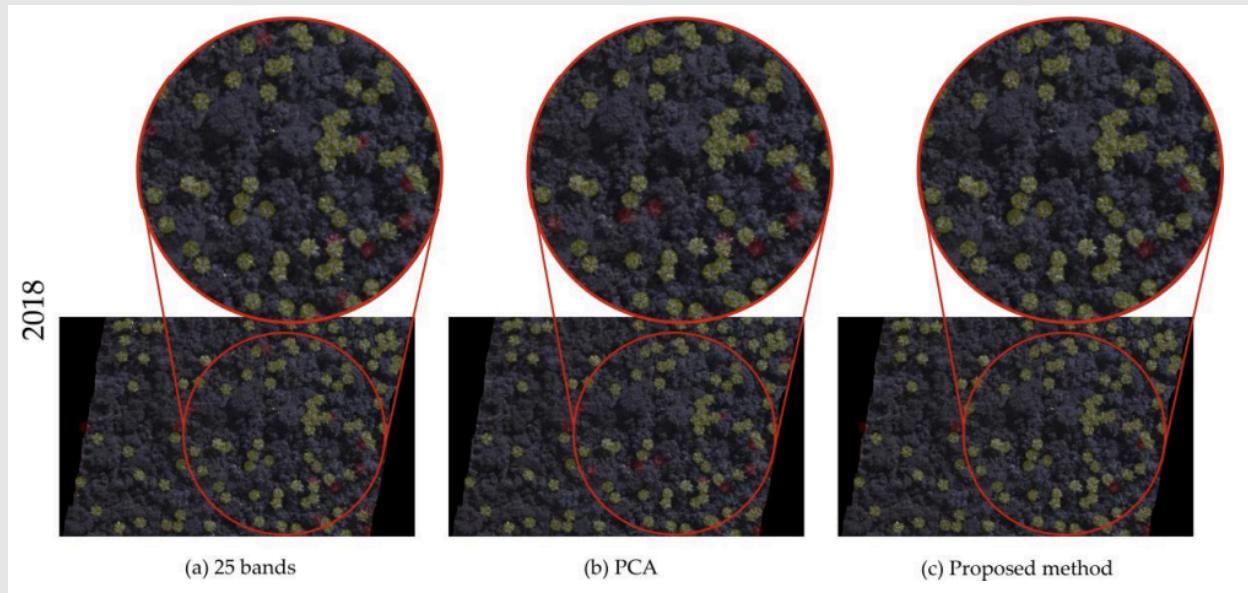
Segmentação de Árvores

Dada uma imagem, segmentar partes da imagem correspondentes as árvores.

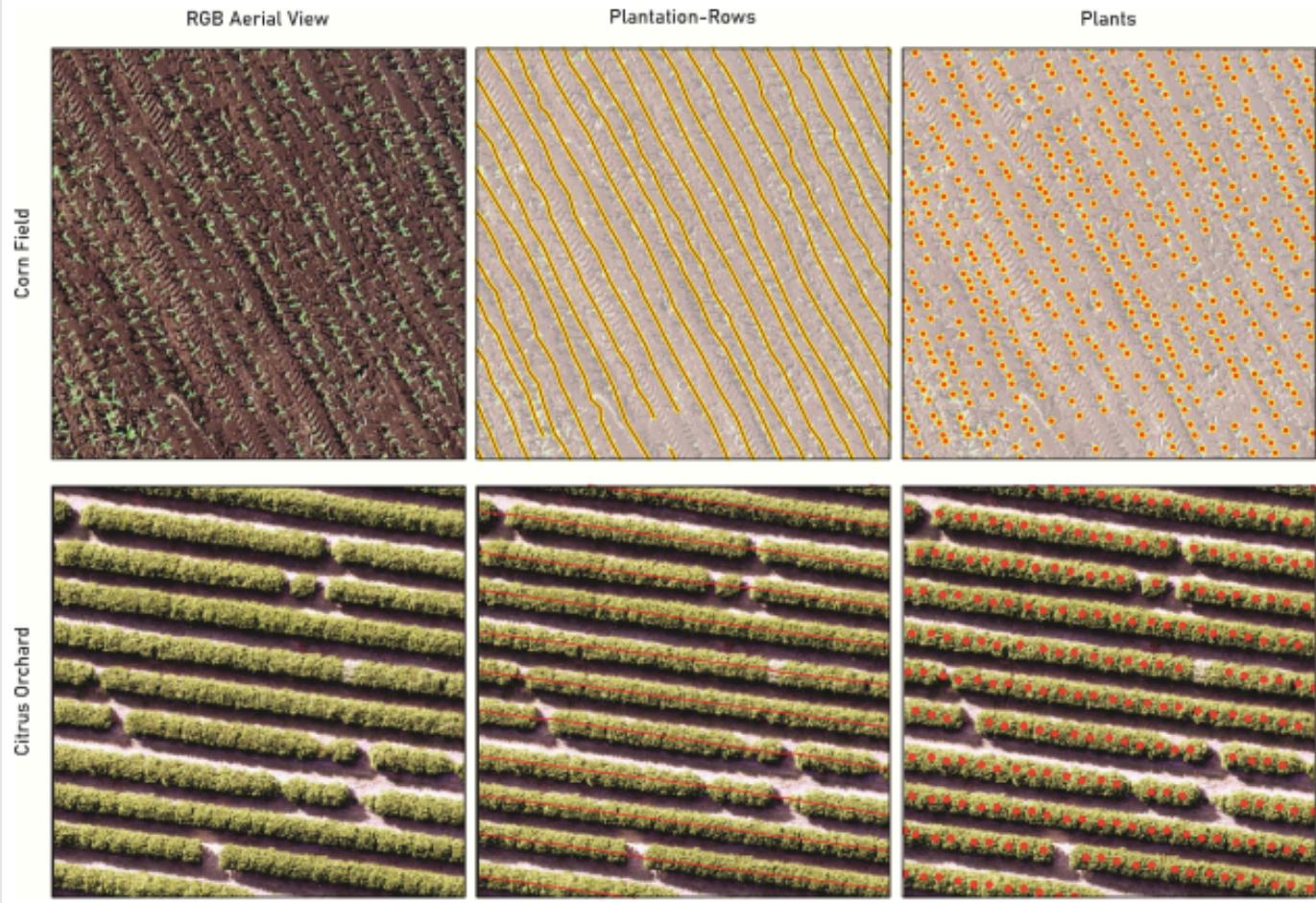


Detecção de Espécie Protegida

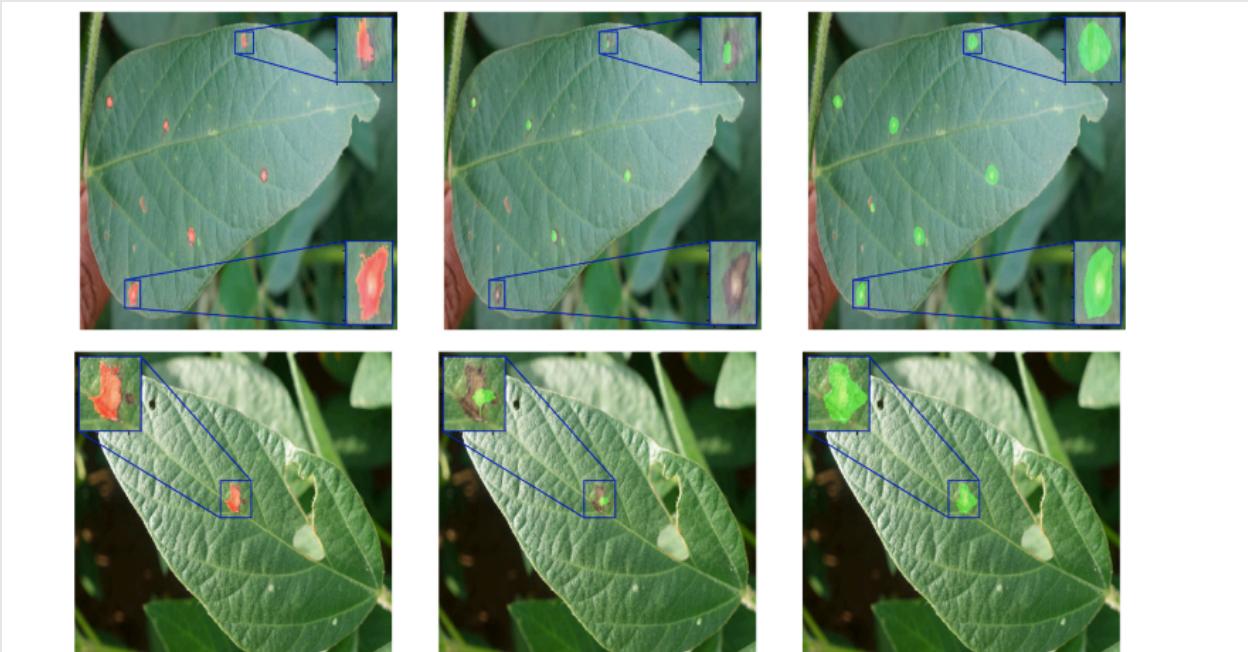
Identificar árvores de uma determinada espécie



Contagem de Plantas e Detecção de Linhos de Plantação



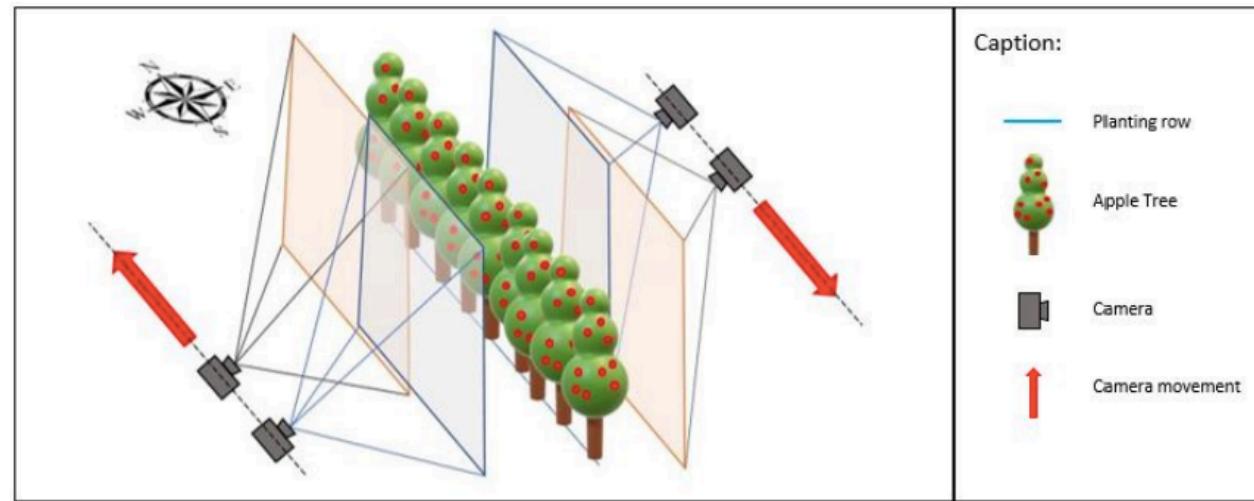
Segmentação de Doença em Folhas de Soja



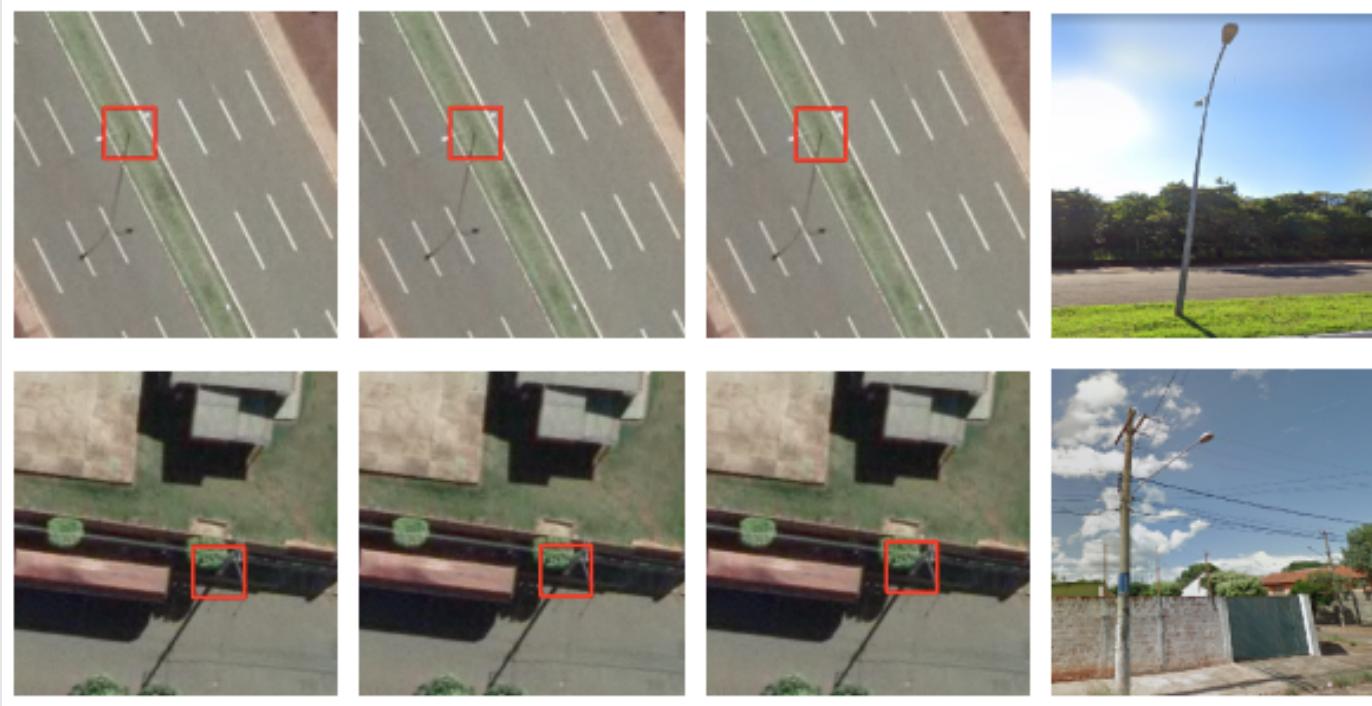
Example of ground-truth (in the left - a), FCN (in the middle - b), and proposed approach (in the right - c) from Soybean Disease dataset.

Contagem de Maçãs

Biffi et. al. ATSS Deep Learning-Based Approach to Detect Apple Fruits, 2021

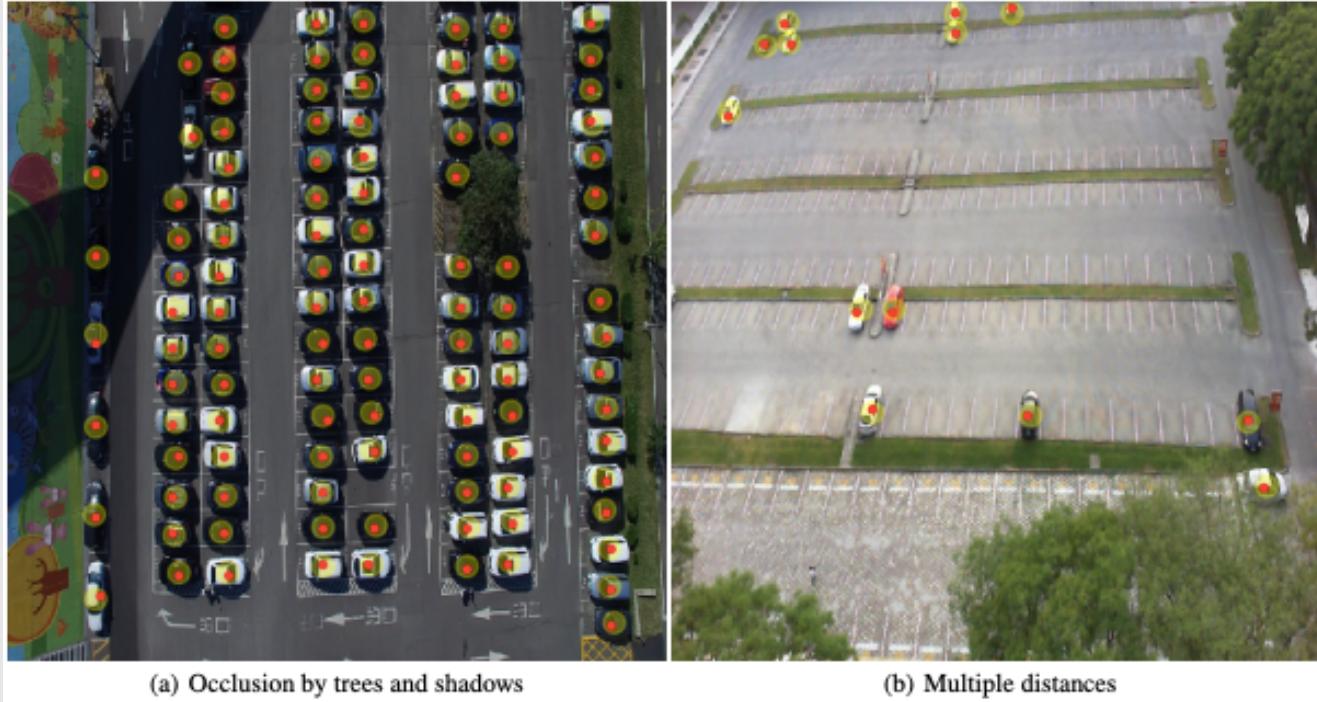


Detecção de Postes em Imagens Aéreas

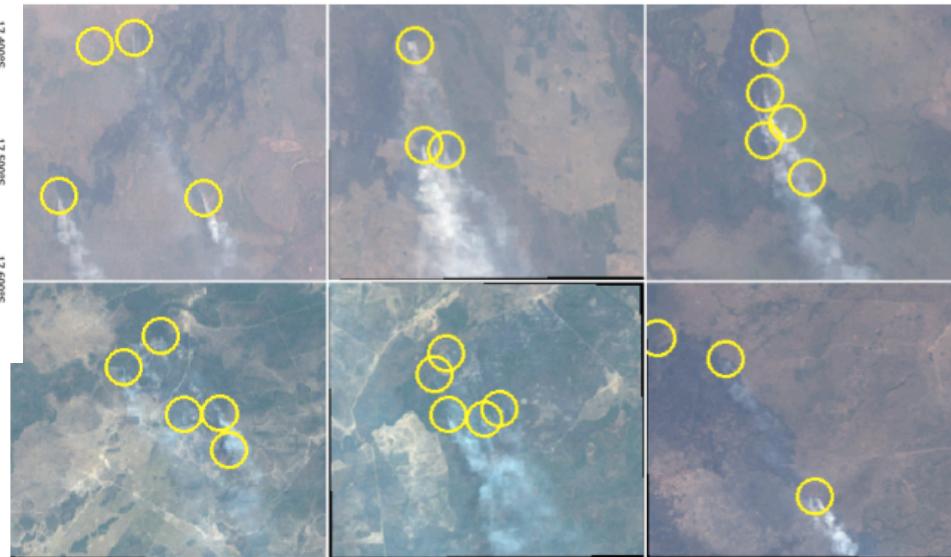
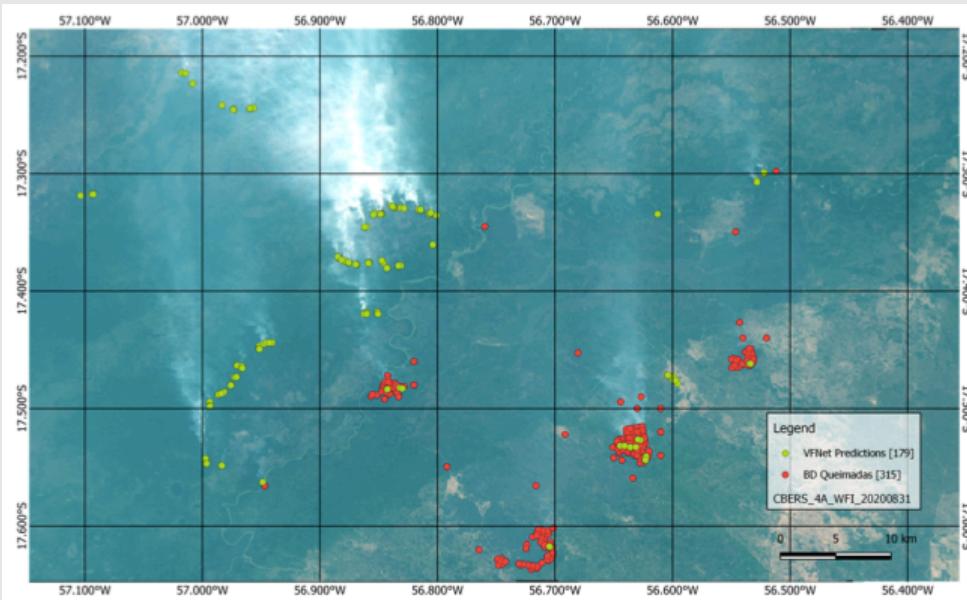


Gomes et. al. Mapping Utility Poles in Aerial Orthoimages Using ATSS Deep Learning Method, 2020

Contagem de Carros e Vagas Livres de Estacionamento



Detecção de Fogo Ativo no Pantanal



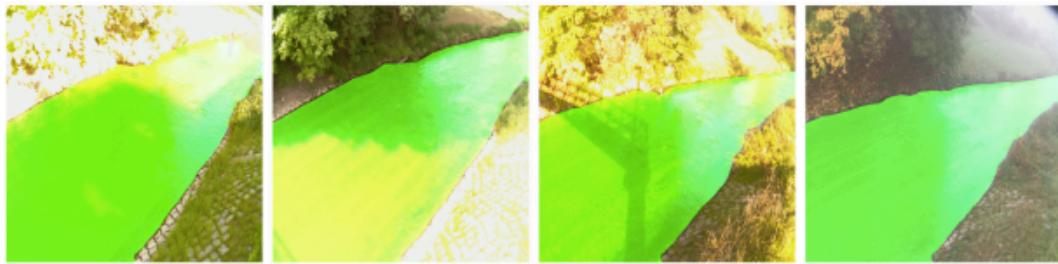
Higa et. al. Active Fire Mapping on Brazilian Pantanal Based on Deep Learning and CBERS 04A Imagery, 2022

Nível de Rio por Câmeras

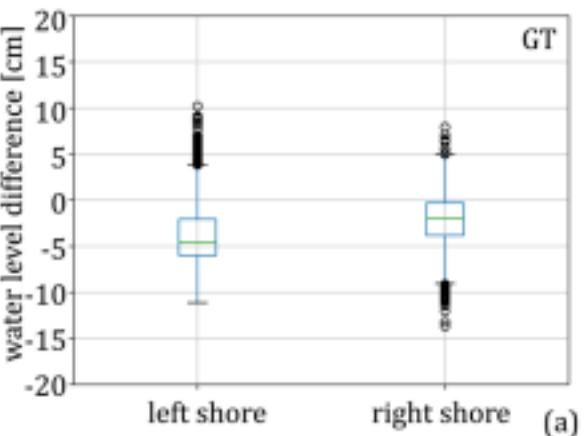
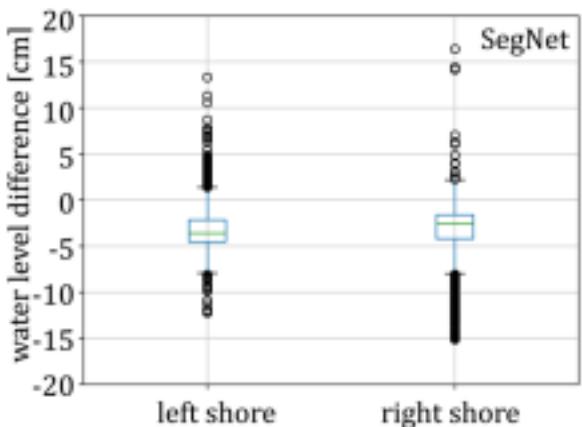
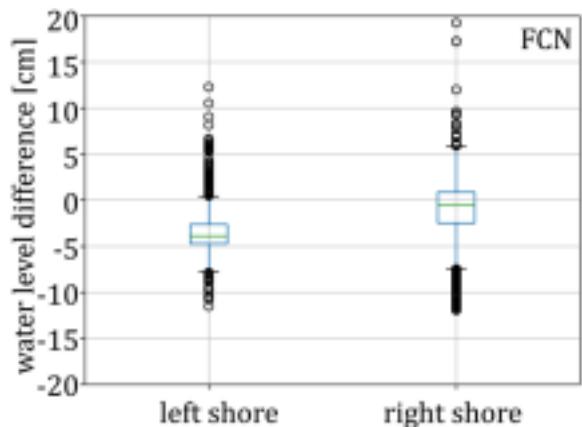
Eltner et. al. Using Deep Learning for Automatic Water Stage Measurements, 2021



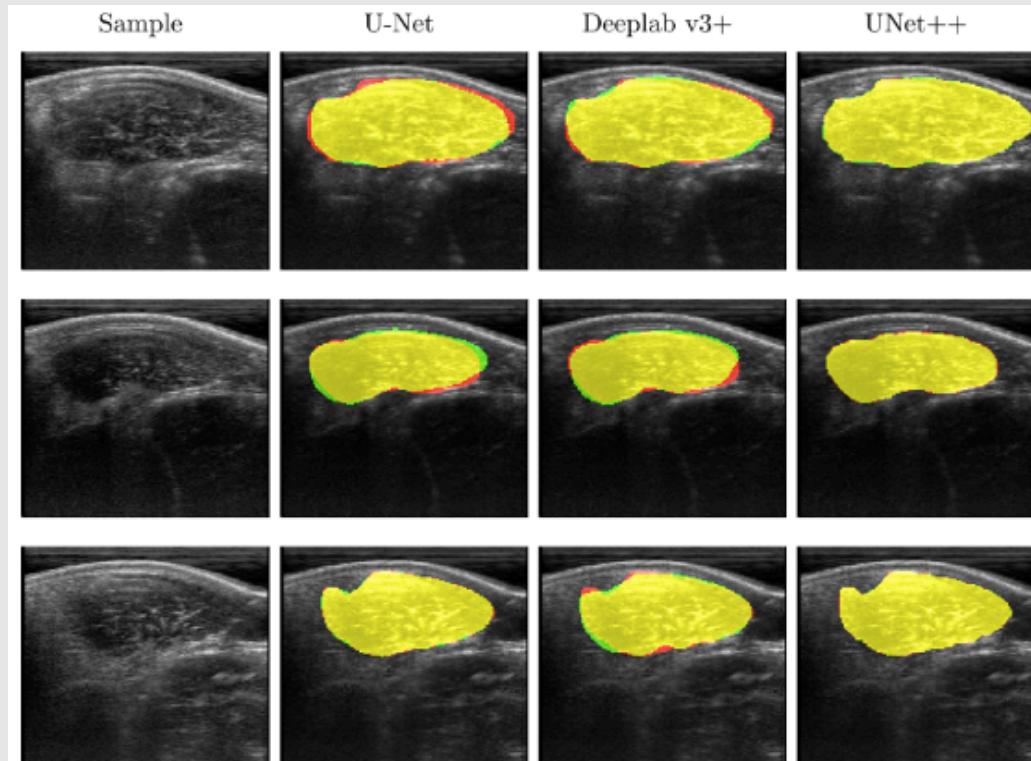
(a) RGB



(b) FCN



Estimativa da Área em imagens de ultrassom



De Melo et. al. Automatic segmentation of cattle rib-eye area in ultrasound images using the UNet++ deep neural network, 2022

Identificação de Cupinzeiros em Florestas



(a) FP on the soil



(b) FP on the grass (nearest box)