Machine Learning

Modeling with Data Limitation

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Teaching, Training and Coaching for more than a decade!

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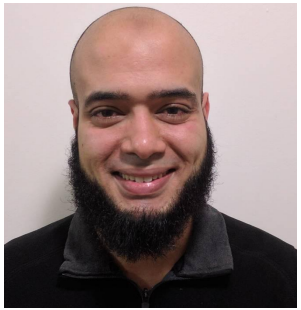


Semantic Segmentation

- Semantic segmentation is the process of assigning **each pixel** of the received image into one of the **predefined classes**.
- These classes represent the segment labels of the image, e.g., roads, cars, signs, traffic lights, or pedestrians

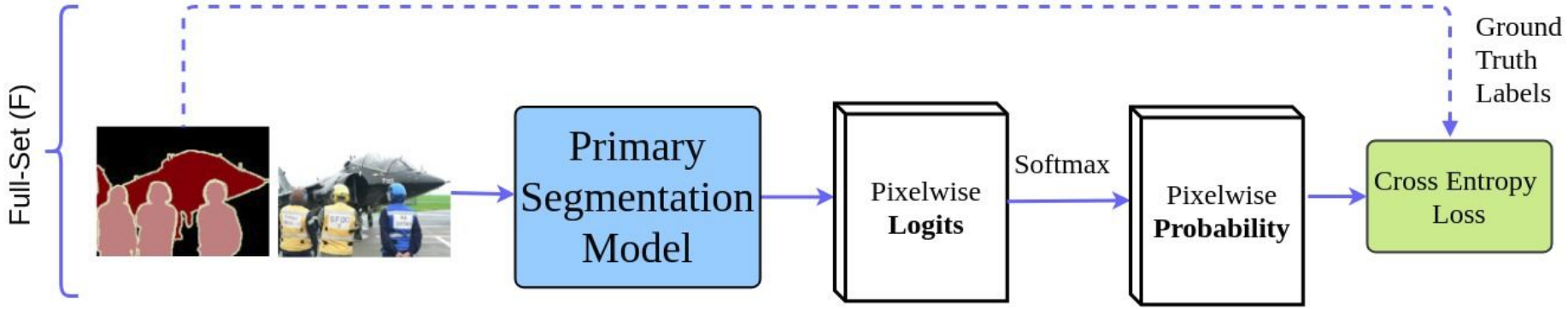
Semantic Segmentation: Annotation Challenges

- What are the annotation challenges?

- Time
- Cost
- Quality (at boundaries)

Semantic Segmentation: Big Picture

- If we have the full ground truth, there are many models available to use!
- What if this is not the case?!
  - For example, the company can't use the non-commercial data and can't afford long annotation process!



Semi-supervised Data Setup

Small Fully labeled Set

Bounding Box

Segmentation

Big Weakly labeled Set

Annotations

Bounding Box

Task

- Given the 2 datasets (Fully and weakly), design an approach that can use these data to build a strong segmentation model
- Think abstract in DNN (deep NN)
  - A network can take input an image or more
  - The network will learn from the ground truth

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."