



# An information retrieval system for fast identification of objects in long duration surveillance videos

Padilla Luis Edgar Abidán<sup>1</sup> & Pinto Avendaño David Eduardo<sup>1</sup> & Cerino Jiménez Rigoberto<sup>1</sup> & López Cortés Francisco José<sup>1</sup> & Reyes Peralta Alberto Esteban<sup>1</sup> & Beatriz Beltrán Martínez<sup>1</sup>

(1) Facultad De Ciencias de la Computación, Benemérita universidad Autónoma de Puebla, México

[edgar.padilla@alumno.buap.com.mx](mailto:edgar.padilla@alumno.buap.com.mx); [davideduardopinto@gmail.com](mailto:davideduardopinto@gmail.com); [cerinorigoberto@hotmail.com](mailto:cerinorigoberto@hotmail.com); [lopcorp.z@gmail.com](mailto:lopcorp.z@gmail.com); [alberto.reyesp@alumno.buap.mx](mailto:alberto.reyesp@alumno.buap.mx); [bbeltranmtz@gmail.com](mailto:bbeltranmtz@gmail.com).

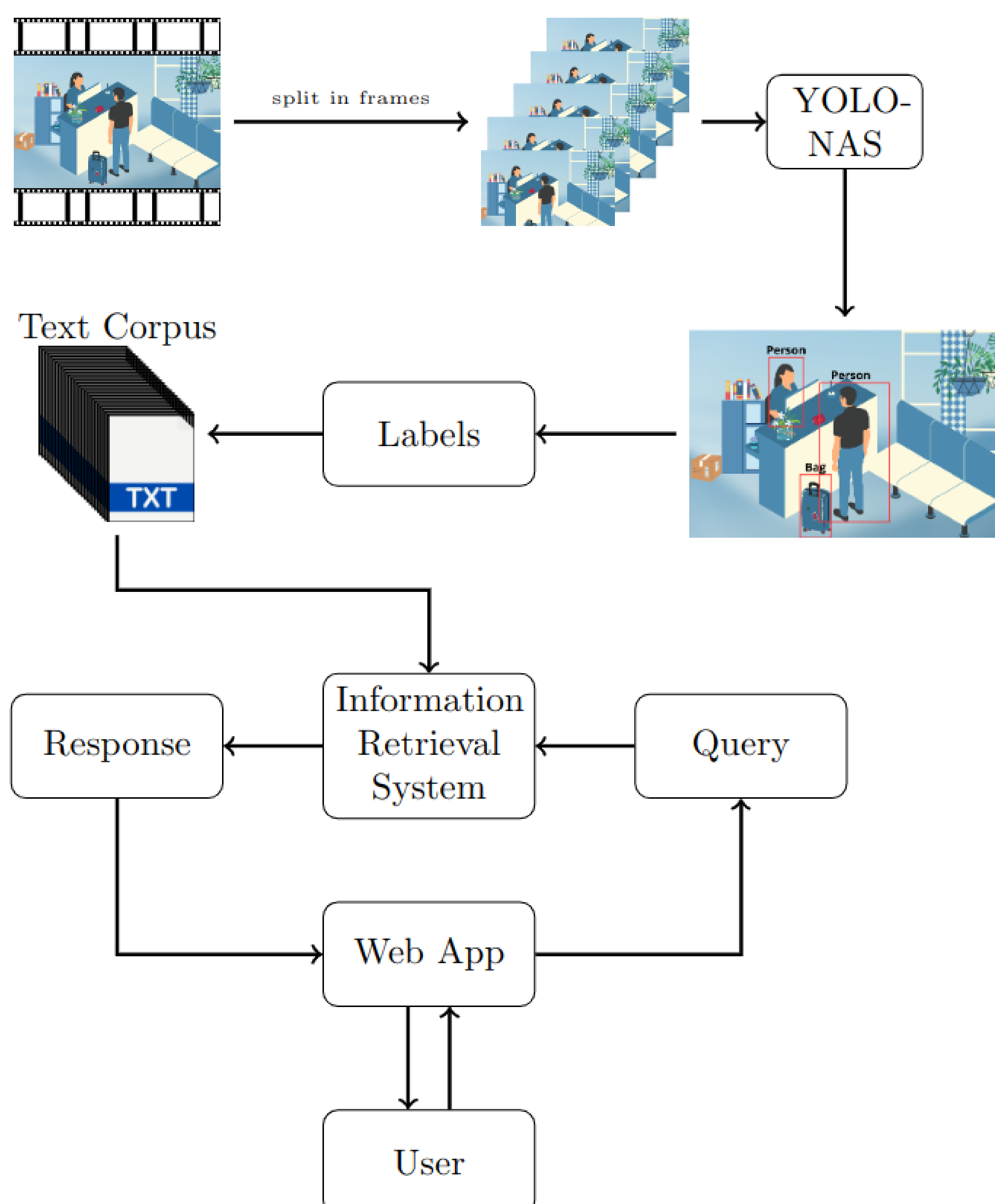


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## 1. Introduction:

Multimedia information retrieval is complex due to the large amount of accumulated data and the difficulty in extracting relevant information from multimedia files [1]. Zhou [2] highlights that current cross-modal models are effective but computationally expensive. We presents an efficient and cost-effective system to identify objects in long security videos using YOLO-NAS [3] as the object detector, from which a text corpus is created. This allows for quick queries via a web application.

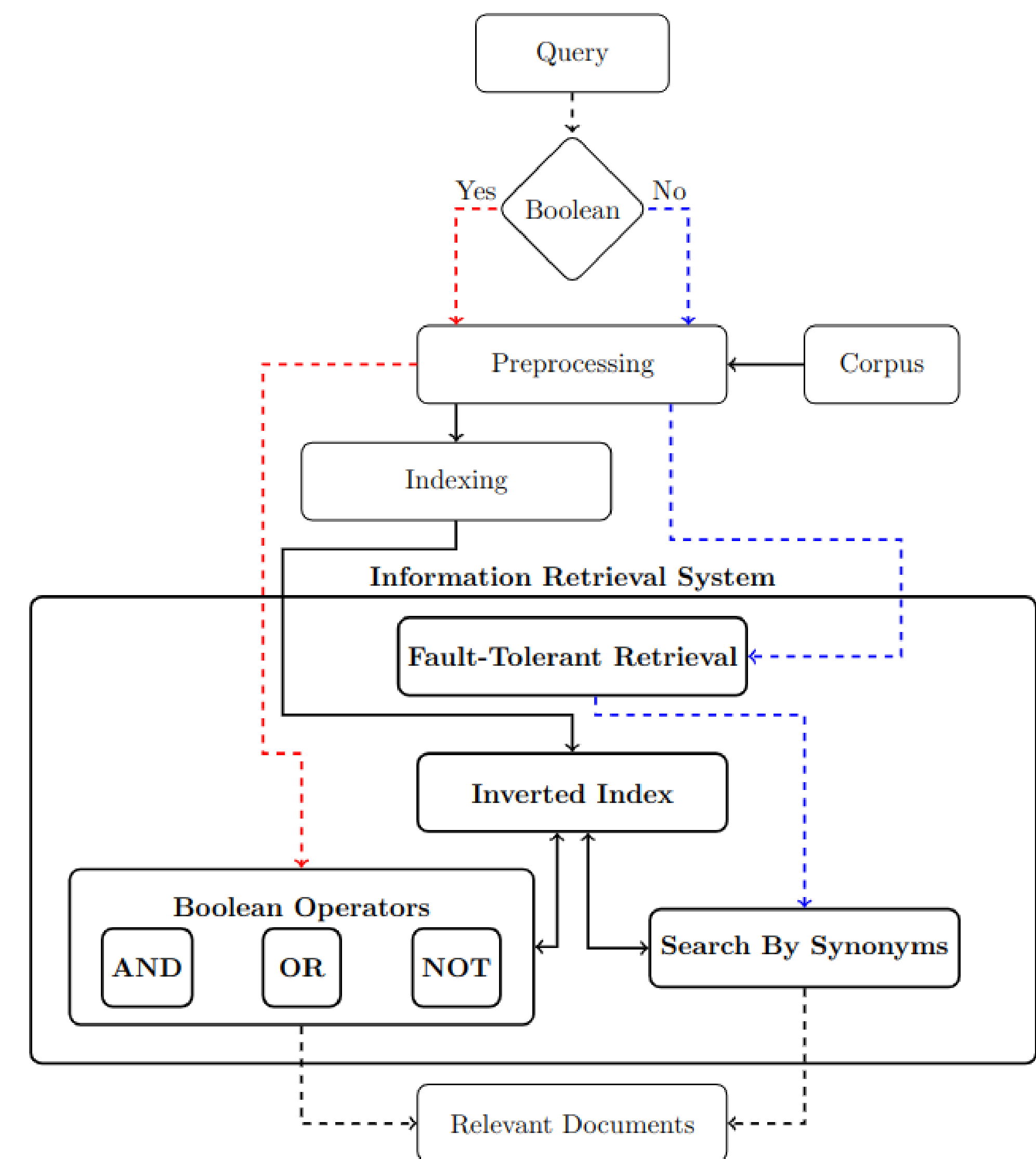
## 2. Methodology:



## 3. System Flow:

- Frame extraction at specified interval.
- Object identification with YOLO-NAS.
- Label saving.
- Corpus creation.
- Query input through a web app.
- System response.
- Display response in web app.

## 3. Fault-Tolerant Boolean Information Retrieval System with Synonym Search:



Scan the QR code to see the system



## 4. Conclusions:

- It has been show that through the use of dictionaries, a non-specialized user can make booleans queries.
- Our methodology can be adpted for the use of highly efficient and low-cost models that solve task such as facial recognition.
- In addition, studies have proven that utilizing dictionaries allows non-specialized users to make specialized queries, enhancing the system's intuitiveness and user-friendliness.

## References:

1. Guoping Qiu. Challenges and opportunities of image and video retrieval. Frontiers in Imaging, 1:951934, 2022.
2. Kun Zhou, Fadratul Hafinaz Hassan, and Gan Keng Hoon. The state of the art for cross-modal retrieval: A survey. IEEE Access, 2023.
3. Shay Aharon, Louis-Dupont, Ofri Masad, Kate Yurkova, Lotem Fridman, Lkdci, Eugene Khvedchenya, Ran Rubin, Natan Bagrov, Borys Tymchenko, Tomer Keren, Alexander Zhilko, and Eran-Deci. YOLO-NAS Super-gradients, 2021.