Project code: 25-1-R-20

Improvements in Person Identification in Video under constraints

Submitting: Asad Saffouri

Alexandra Simonishvili

Supervisor: Mr. Ilya Zeldner

Project Description

Today cameras and videos take a significant part in many various aspects of our lives. They already have a wide usage in security, production, culture entertainment and i.e. Along with that arises the need for efficient and precise person identification systems for videos. Our project provides a new approach for person recognition and tracking in video, combining person identification technology and object tracking in video algorithm. We use person identification techniques from previous project (AI-Driven Person Recognition and Identification in Videos by Rom Harell and Itay Benjamin) that combines YOLO (You Only Look Once) algorithm for human detection and FaceNet algorithm for person face recognition and upgrade it with FlowNet algorithm for object tracking. Our approach promises significant improvements in the video person detection ability which is very useful in different institutions.

As already mentioned, person identification systems are critical in areas such as security, surveillance (e.g., tracking individuals in crowded environments), smart devices vision and media analysis. Existing methods often struggle with accuracy and efficiency due to the inherent challenges of dynamic video environments, including changing lighting, movement, and resolution variability, as well as situations where faces are partially or fully obscured. Enhancing person recognition and tracking in such conditions is crucial to meet the needs of real-world institutions and applications.