

Detection of Pharmaceutical Personal Protective Equipment in Video Stream

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Abstract : Pharmaceutical manufacturing is a complex process, where each stage requires a high level of safety and sterility. Personal Protective Equipment (PPE) is used for this purpose. Despite all the measures of control, the human factor (improper PPE wearing) causes numerous losses to human health and material property. This research proposes a solid computer vision system for ensuring safety in pharmaceutical laboratories. For this, we have tested a wide range of state-of-the-art object detection methods. Composing previously obtained results in this sphere with our own approach to this problem, we have reached a high accuracy (mAP@0.5) ranging from 0.77 up to 0.98 in detecting all the elements of a common set of PPE used in pharmaceutical laboratories. Our system is a step towards safe medicine production.

Keywords : sterility and safety in pharmaceutical development, personal protective equipment, computer vision, object detection, monitoring in pharmaceutical development, PPE

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