

AI applied to images

Artificial Intelligence (AI) applied to images has revolutionized the field of Computer Vision, driven by advancements in Deep Learning (DL) techniques like Convolutional Neural Networks (CNNs)[1]. These technologies have significantly enhanced the performance and efficiency of image processing, enabling breakthroughs in object detection, pattern recognition, and segmentation[2] with accuracy surpassing human levels. Such progress has led to the development of cutting-edge AI applications in biometrics, including face and palm recognition[3][4], as well as real-time monitoring and analytics systems[5]. In the medical domain[6][7], AI's impact is profound, with DL methods being utilized in cancer diagnosis and lung tissue analysis, offering invaluable support for modern healthcare.

References:

Advancements in Computer Vision using CNNs:

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State-of-the-art performance in object detection and segmentation:

2. He, K., Gkioxari, G., Dollár, P., & Girshick, R. (2017). *Mask R-CNN*. In *Proceedings of the IEEE International Conference on Computer Vision* (pp. 2961-2969).

AI in biometrics (face and palm recognition):

3. Parkhi, O. M., Vedaldi, A., & Zisserman, A. (2015). *Deep Face Recognition*. In *British Machine Vision Conference (BMVC)*.
4. Zhang, X., Wang, Y., & Lv, S. (2020). *Palmprint Recognition Using a Novel CNN*. *IEEE Access*, 8, 20255-20266.

Real-time monitoring and analytics systems:

5. Wang, L., Hu, Y., & Li, L. (2020). *Real-Time Object Detection with Deep Learning Models in Edge Devices*. *IEEE Access*, 8, 157945-157954.

AI in medical imaging (cancer diagnosis and lung tissue analysis):

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