Similar Solutions:

* OralCam enables end-users to self-examinate five common oral conditions by taking smartphone photos [9]
* Using deep convolutional neural network (CNN) model to classify teeth with periodontal diseases from optical color images [10]
* Screen gingivitis and its irritants, i.e., dental calculus and soft deposits, from oral photos with a novel Multi-Task Learning convolutional neural network (CNN) model [11].
* MobileNetV3-Small trained to detect cavities on RGB images [12]
* Automatic diagnosis model trained by MASK R-CNN developed for the detection and classication of 7 different dental diseases for in clinic use [13]
* Multi-task learning (MTL) convolutional neural network for tooth localization, caries detection, and fissure sealant detection (dataset available upon request) [14]
* **Artificial intelligence for dental caries detection: A mixup, fine-tuning, and quantization approach on the MobileNetV2 model [15]**
* Need artificial intelligence (AI)-driven diagnostic tools that are accurate, portable, cost-effective, and accessible to wider populations.
* A significant challenge arises when models trained on clinical datasets are deployed in nonclinical environments. Smartphone images typically exhibit variations in lighting, resolution, and angles, leading to performance degradation due to domain shift.
* Lightweight CNN models such as MobileNetV2 have been developed for efficient inference on edge devices, including smartphones with fewer parameters and lower computational demands.
* Artificial Intelligence in Dental Caries Diagnosis and Detection: An Umbrella Review [16]
* Accuracy of Artificial Intelligence-Based Photographic Detection of Gingivitis [17]
* Combination of images and asking for information (i.e. if there is bleeding? If there is pain while chewing? Sensitivities?)

[9] https://dl.acm.org/doi/pdf/10.1145/3313831.3376238

[10] https://www.mdpi.com/2079-9292/12/7/1518

[11] https://www.nature.com/articles/s41598-021-96091-3

[12] https://arxiv.org/pdf/2308.15705

[13] https://www.researchgate.net/publication/333702517\_A\_Smart\_Dental\_Health-IoT\_Platform\_Based\_on\_Intelligent\_Hardware\_Deep\_Learning\_and\_Mobile\_Terminal

[14] https://bmcoralhealth.biomedcentral.com/articles/10.1186/s12903-024-04254-1

[15] https://pmc.ncbi.nlm.nih.gov/articles/PMC12377672/

[16] https://pmc.ncbi.nlm.nih.gov/articles/PMC11358700/

[17] https://pmc.ncbi.nlm.nih.gov/articles/PMC10509417/#sec0011