Privacy Attributes-aware Message Passing Neural Network for Visual Privacy Attributes Classification

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Background

Task: Visual Privacy Attributes Classification (VPAC) is to classify an input image into multiple pre-defined visual privacy attributes, e.g., face, race, gender and address.

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Challenge: Different from single-label classification, the label number for each input in VPAC is unknown. This causes the challenge that the output space is extremely large. **Solution**: We leverage the Message Passing Neural Network to model the dependencies between privacy attribute classes, in which each node represents a privacy attribute class.



Labels: Partial Face Race Skin Color Approximate Age Approximate Weight Occupation Gender Eye Color Social Circle Professional Circle Professional Circle Hair Color Complete Face



Framework Overview



Message Passing Neural Network

Experimental Results

Node

Feature



Average Precision scores on all visual privacy attributes. (C) represents 'complete'. (P) represents 'partial'.