FACE GENDER CLASSIFICATION FOR PUBLIC TOILET DOOR USING CONVOLUTIONAL NEURAL NETWORK

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain

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ABSTRACT

Safety and comfort in using public facilities, especially public toilets, are crucial because the needs of each gender, male and female, are different in using the public toilet. Because of this issue, a face gender classification system was developed to detect the faces of user candidates before entering a public toilet. Public toilet users must match the gender of the toilet so that the public toilet is safe and comfortable to use. The Convolutional Neural Networks (CNN) algorithm is proposed to solve the problem by implementing this algorithm for the face gender recognition system to detect toilet users' face gender. The face gender recognition system will be implemented in the public toilet door through Arduino Uno as the microcontroller. The Arduino Uno is connected to a web camera to detect the user candidate's face and the motor servo controls the door movement whether or not the user is allowed to enter the toilet. This final project case will implement a female public toilet so that only female users are allowed to enter the toilet.

Keyword —— Face Recognition, Convolutional Neural Network, Arduino Uno

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