APPLICATION OF COMPUTER VISION IN THE PREVENTION OF TEACHER BURNOUT

Evgeni Valchev, Dimitar Stoyanov, Todorka Glushkova

Abstract. The application of computer vision in the prevention of teacher "burnout" can have a positive effect by providing tools and data analysis to improve the schoolwork environment and support teachers. This analysis includes various aspects of teachers' work, such as:

- Monitoring the emotional state by processing sensor data from cameras that measure their emotional states during classes.
- Analysis of emotional signals, by using algorithms to recognize emotions in teachers' facial expressions, as well as their voice characteristics.
- Analysis of teachers' gestures and behavior in the classroom to detect signs of tension or physical fatigue.

By applying appropriate AI algorithms to the collected data, feedback is provided to teachers regarding their emotional state, and advice is given to them to deal with stress and tension. As a result, the working day of teachers can be analyzed and a proposal can be generated for a more appropriate distribution of time between class work, school work, and teachers' self-training.

The entire process related to the prevention of burnout among teachers requires strict compliance with ethical and legal standards for the protection of personal data and taking into account the interests and wishes of teachers.

The article will examine some approaches to applying computer vision and AI algorithms to track and prevent teacher burnout in a cyber-physical educational school environment.

Acknowledgments

The results published in this article are part of a study conducted with the financial support of scientific project FP23–FMI–002 "Intelligent software tools and applications in research in mathematics, informatics and teaching pedagogy" at the Plovdiv University "Paisii Hilendarski".

Evgeni Valchev¹, Dimitar Stoyanov², Todorka Glushkova³ ^{1,2,3} Paisii Hilendarski University of Plovdiv, Faculty of Mathematics and Informatics, 236 Bulgaria Blvd., 4003 Plovdiv, Bulgaria Corresponding author: glushkova@uni-plovdiv.bg