Visual Evaluation Based Analysis in Classroom Environment

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Abstract: *To overcome the shortcomings of current classroom evaluation methodologies, a teaching effectiveness evaluation strategy based on computer vision technology is being developed. Attendance is determined by using face detection. The curve fitting approach is used to objectively assess the seat selection distribution. The head-up rate of students raising their heads and good feelings are determined using head posture estimation technology and facial expression recognition technology to assess students' up or down state and expressions, respectively. Finally, to analyse the teaching effect, a geometric mean function based on attendance, seat attendance detection, head up rate, and the proportion of happy sentiments is provided. The experiment findings show that this method's evaluation results are quite close to those of teachers and pupils.*

Keywords: Computer Vision; Seat Selection Distribution; Attendance; Head Up Rate; Positive Emotion

REFERENCES

[1]. TANG K, XIAN Q, LI M Y. Study on classroom Attention in university based on Face Detection [J]. Journal of Chongqing Normal University (JCR-SCI), 2019, 36(05):123-129.

[2]. HOU L G, WANG Y, ZHANG S E, FAN FW, LUO Q M. Application of Face Detection technology in Reaching evaluation [J]. Electronic World, 2016(24): 37-38.

[3]. HAN L, LI Y, ZHOU Z J, SONG P X. Analysis of teaching effect based on facial expression in classroom environment [J]. Modern Distance Education 2017(04) 97-103+112.

[4]. Li Jian. Research on real-time intervention method of Negative emotion infection in classroom Based on computer vision [D]. Jilin University, 2020.

[5]. Pei, J.Y., Shan, P. A micro-expression recognition algorithm for students in classroom learning based on convolutional neural network. Treatment du Signal, 2019, 36 (6): 557-563.

[6]. YU K H, DENG D F. A Survey on College English Classroom Seat Selection and Learning Status Differences of Non-English majors: A case study of Guangxi Normal University for Nationalities [J]. Journal of Shaanxi Pre-school Normal University, 2015, 31 (02):16-19.

[7]. LI J. Research on real-time Intervention method of Negative Emotion infection in classroom based on computer vision [D]. JI LIN University, 2020.

[8]. WANG Z G. Fuzzy ranging and map construction based on image recognition [D]. Southwest Jia tong University, 2019.

[9]. YUAN Y T. Based on monocular vision, intelligent vehicle front obstacle identification and ranging [D]. Jilin University, 2016.

[10]. Kwon, D., Reddy, R. R. S., & Reis, I. M. (2021). ABCMETA app: R shiny application for simulation-based estimation of mean and standard deviation for meta-analysis via approximate Bayesian computation. Research synthesis methods, 12(6), 842-848.

[11]. Singh, P., Williams, K., Jonnalagadda, R., Gogineni, A., & Reddy, R. R. S. (2022). International Students: What's Missing and What Matters. Open Journal of Social Sciences, 10(2), 381-397.

[12]. Lu, N., Butler, C. C., Gogineni, A., Sarmiento, J. M., Lineen, E. B., Yeh, D. D., ... & Byers, P. M. (2020). Redefining Preventable Death—Potentially Survivable Motorcycle Scene Fatalities as a New Frontier. Journal of surgical research, 256, 70-75.

[13]. Sarmiento, J. M., Gogineni, A., Bernstein, J. N., Lee, C., Lineen, E. B., Pust, G. D., & Byers, P. M. (2020). Alcohol/illicit substance use in fatal motorcycle crashes. Journal of surgical research, 256, 243-250.