ESTIMATING PERSONALITY TRAITS FROM JOB INTERVIEW VIDEO ANALYSIS: DETECTING THE IMPORTANCE OF HUMAN NONVERBAL CUES.

Kenan Kassab (ИТМО)

Scientific supervisor - Associate professor Alexey Kashevnik (ИТМО)

Introduction. In the contemporary job market, companies often receive a substantial volume of applications in response to job openings. The process of reviewing, analyzing, and evaluating each application can be highly labor-intensive and time-consuming. Consequently, there is an increasing demand for artificial intelligence (AI) tools to assist in the assessment of these applications and to help identify promising candidates for specific job positions. This paper expands upon our existing benchmark model for evaluating a candidate's potential in the sales field. Specifically, we examine video interview data and assess personality traits through the OCEAN model [1][2]. Additionally, we investigate the impact of non-verbal cues in job interviews and their influence on the overall assessment process. We propose an enhanced framework that extracts non-verbal signals, such as eye contact, smiling, posture, and head movements, among others, and integrates them with personality trait data. This approach aims to provide a more comprehensive and reliable evaluation of candidates.

Main part. This study explores how nonverbal cues influence hiring and job performance. We propose a framework for evaluating sales skills by combining personality traits with features extracted from video interviews. We analyze a variety of nonverbal signals that can be extracted from video interviews and propose a framework for evaluating sales skills by integrating personality traits with the collected features. Using the VPTD dataset, we demonstrate that smiling is a reliable indicator of extraversion and sales ability. Additionally, we examine the impact of head movements (roll, pitch, yaw) on personality assessment, particularly extraversion and neuroticism. Our results show that these nonverbal cues can enhance the accuracy and reliability of sales skills and performance evaluations.

Conclusions. The results focus on presenting our proposed framework for estimating sales abilities and job performance, integrating personality traits with non-verbal cues. We highlight the significance of nonverbal cues in job interviews and their effect on the assessment process, validating their impact through the training and testing of multiple models on the VPTD dataset.

List of sources used

1. Koutsoumpis, A., Ghassemi, S., Oostrom, J.K., Holtrop, D., Breda, W.V., Zhang, T., & Vries, R.E. (2024). Beyond traditional interviews: Psychometric analysis of asynchronous video interviews for personality and interview performance evaluation using machine learning. *Comput. Hum. Behav., 154*, 108128.
2. Effects of personality traits on visitors attending an exposition: the moderating role of anxiety attachment / M. J. Kim [et al.] // Asia Pacific Journal of Tourism Research. — 2018. — May. — DOI: 10.1080/10941665.2018. 1468346.

Author _____ Kenan Kassab

Scientific supervisor _____ Alexey Kashevnik