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# Implementation of Security Access Control using American Sign Language Recognition via Deep Learning Approach

Susa, Julie Ann B.<sup>a</sup> ; MacAlisang, Jonel R.<sup>b</sup> ;  
 Sevilla, Rovenson V.<sup>c</sup> ; Evangelista, Ryan Soriente<sup>d</sup> ;  
 Quismundo, Allan Q.<sup>e</sup> ; Melegrito, Mark P.<sup>f</sup> ; Reyes, Ryan C.<sup>g</sup>   
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<sup>a</sup> Southern Luzon State University, Dept. of Computer Engineering, Quezon, Lucban, Philippines<sup>b</sup> Technological University of the Philippines, Technology Licensing Office-ITSO, Manila, Philippines<sup>c</sup> Technological University of the Philippines, Dept. of Electrical Engineering, Manila, Philippines<sup>d</sup> Sulu State College, School of Computer Studies and Engineering, Sulu, Philippines[View additional affiliations](#) [Full text options](#) [Export](#) **Abstract****Author keywords****Indexed keywords****SciVal Topics****Metrics****Abstract**

Sign language is a kind of conversation that consists of a set of gestures or postures used to converse with the deaf and mute. It is usually accomplished with hands, which implies profound signals, especially when both the receiver and sender are well-versed in the subject. Signals generated by hand gestures can also be used in a variety of applications such as augmented reality (AR), gaming, robotics, and vision-based applications. However, sign language interpretation via computer vision has yet to be implemented as a security access control, which could provide a significantly greater authentication method and better statutory provisions. The trained model's use as a security access control system was also taken into consideration. It is done by creating a Python-based GUI that takes a single frame from a camera. A layer loss of 2.803 and an mAP of 98.69 % were the final results after 14 epochs. The study shows that when compared to earlier comparable research pursuing the same objective, this study's validation accuracy is the highest. © 2022 IEEE.

**Author keywords**

deep learning; hand sign; object detection; security access control; transfer learning

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