

The Feasibility of Network Data Transmission Reducing based on Vision Language Model (VLM)

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Abstract—This study verifies that transmitting plain text descriptions, instead of image files, can effectively reduce network transmission when conveying moods or concepts through images. The proposed approach requires only 1–1.25% of the data size of the original image. A data structure integrating a basic vision-language model with relational links between multiple objects is implemented. Experimental results confirm the feasibility of translating images into descriptive text for network transmission. Both reduced data load and preserved semantic content for efficient communication would be available.

Keyword—Image Recognition, Artificial Intelligence, Vision Language Model, Network



Ming-Shen Jian was born in Kaohsiung City, Taiwan in 1978. He received the B.S. from the National Chiao Tung University, HsinChu, and Ph.D degrees in Computer Science and Engineering from the National Sun Yat-sen University, Kaohsiung, Taiwan in 2007. From 2018, he was an Associate Professor and director with the National Formosa University Cloud Computing and Intelligent System Laboratory. Currently he is also an IEEE Senior Member. Since 2009, he has been an Assistant Professor with the Computer Science and Information Engineering Department, National Formosa University. He is the author of four books, more than 50 articles, and at least 15 invention patents. His research interests include IOT development and application, Big Data, Optimal Solution, Intelligent System, and Cloud Computing. He was a Secretary of the Taiwan Association of Cloud Computing. Dr. Jian was a recipient of the IEEE sponsored international conference Paper Award in 2016, 2017, and 2018.



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