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An Internet virtual reality collaborative environment for effective product design

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Abstract

This paper describes an Internet-based virtual reality collaborative environment called virtual reality-based collaborative environment (VRCE) that was developed using VNet, a free software, Java and Virtual Reality Modeling Language (VRML) to demonstrate the feasibility of collaborative design for small to medium size companies that focus on a narrow range of low cost products. Infrastructure, user functions and operational characteristics are described, and a case illustrates the use of this system that incorporates six key design elements needed for a successful virtual collaboration system (VCS). This new VRCE system is compared to existing commercial systems. Discussion highlights the potential pitfalls in using such a system without careful consideration of the knowledge required, product complexity and required system customization time.



Keywords

Virtual reality-based collaborative environment (VRCE); Virtual Reality Modeling Language (VRML); Virtual reality (VR)

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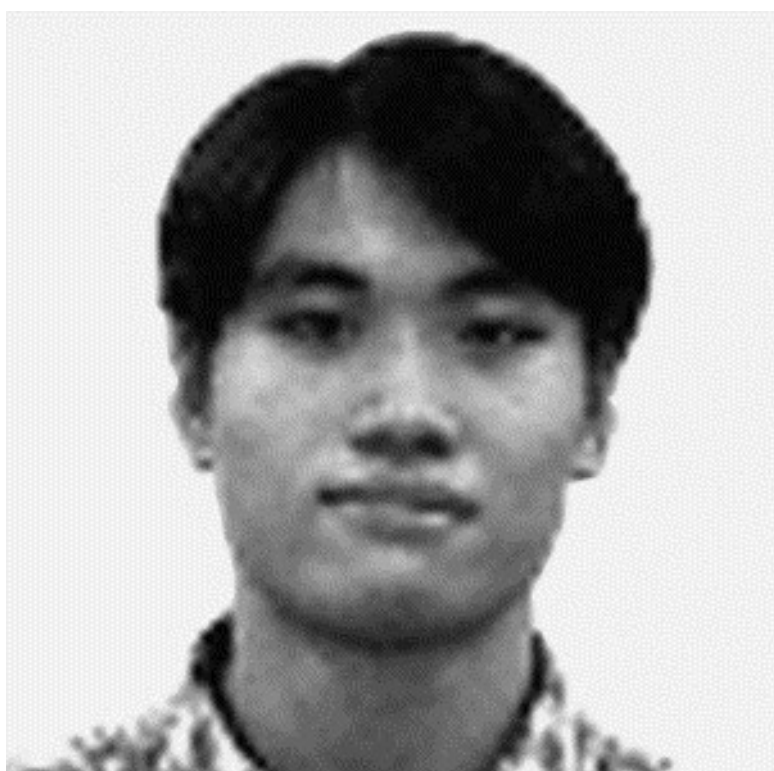
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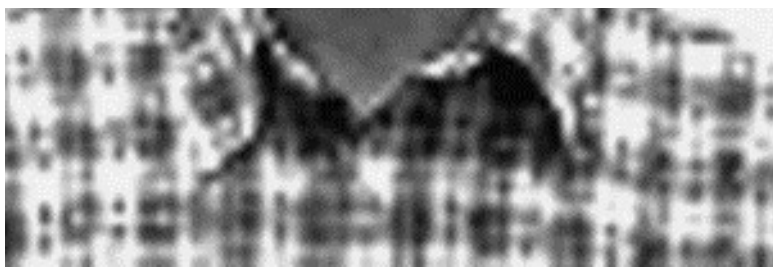
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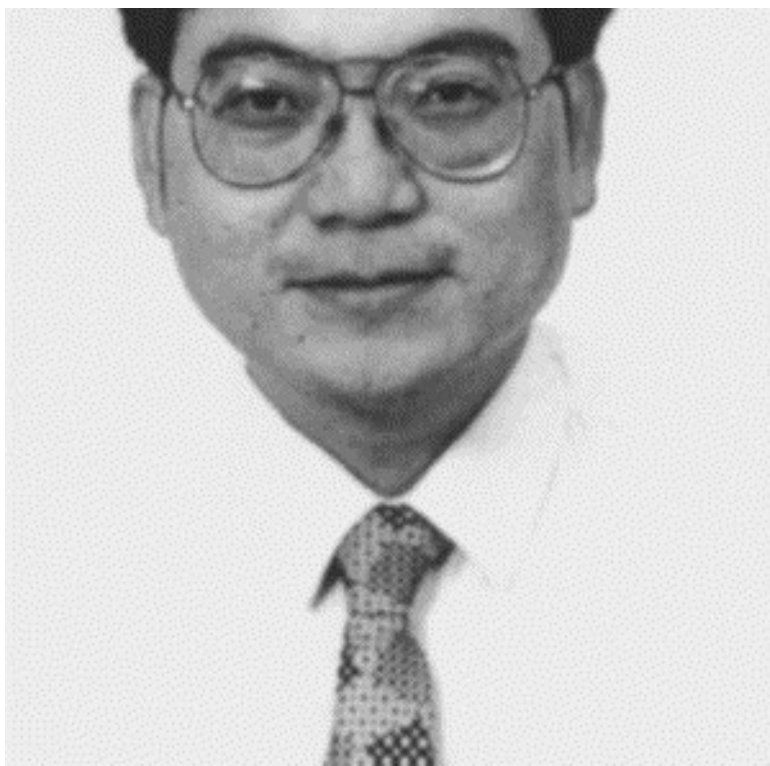


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Chuan-Jun Su has been Assistant Professor in the Department of Industrial Engineering and Engineering Management at The Hong Kong University of Science and Technology and is founder of Horky.com Corporation in Taiwan. He received his PhD in Industrial Engineering from Texas A&M in College Station, TX.

¹ Parts of the manuscript were prepared while the author was serving as a Visiting Assistant Professor in the Department of Industrial Engineering, University of Wisconsin-Madison, Madison, WI, USA.

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