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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.



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Keywords

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

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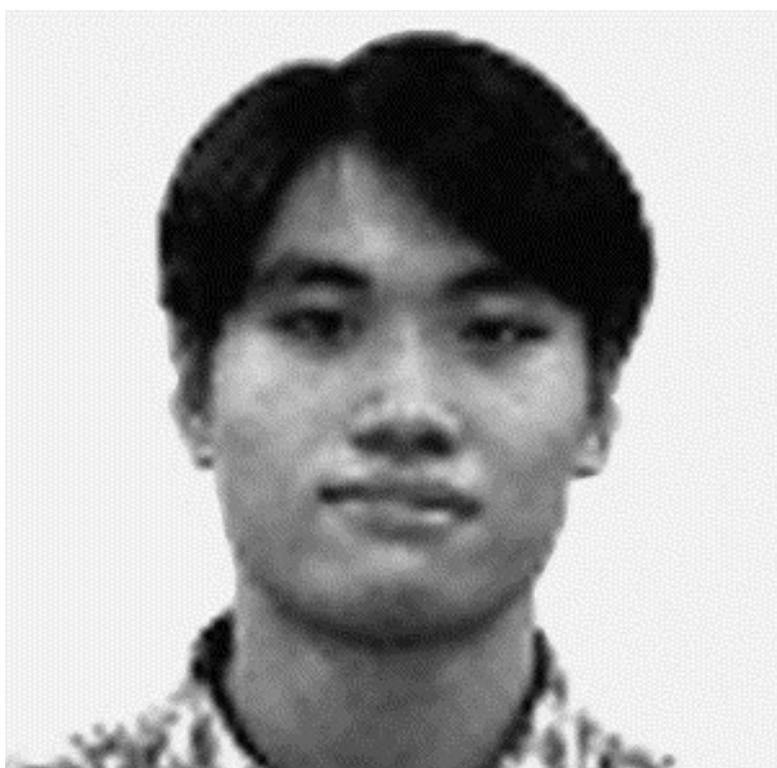
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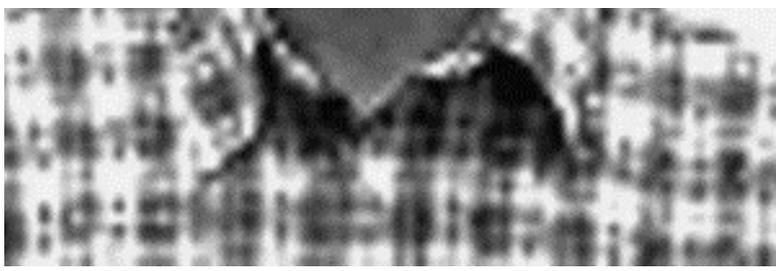
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¹ Parts of the manuscript were prepared while the author was serving as a Visiting Assistant Professor in the Department of Industrial Engineering, University of Wisconsin-Madison, Madison, WI, USA.

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