2007

BioGauges: Toward More Objective Evaluation of Biometrically-Based Interfaces

Adriane B. Randolph  
*Kennesaw State University*, arandol3@kennesaw.edu

Melody Moore Jackson  
*Georgia Institute of Technology*, melody@cc.gatech.edu

Steven G. Mason  
*Neil Squire Society*, smason@telus.net

Follow this and additional works at: http://aisel.aisnet.org/sighci2007

Recommended Citation  
http://aisel.aisnet.org/sighci2007/10

This material is brought to you by the Special Interest Group on Human-Computer Interaction at AIS Electronic Library (AISeL). It has been accepted for inclusion in SIGHCI 2007 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.
BioGauges: Toward More Objective Evaluation of Biometrically-Based Interfaces

Adriane B. Randolph
Kennesaw State University
1000 Chastain Road, Bldg. 4
Kennesaw, GA 30144
+1 770-423-6083
arandol3@kennesaw.edu

Melody Moore Jackson
Georgia Institute of Technology
85 5th Street, NW, TSRB 332
Atlanta, GA 30332
+1 404-385-7510
melody@cc.gatech.edu

Steven G. Mason
Neil Squire Society
Suite 220 - 2250 Boundary Road
Burnaby, BC V5M 3Z3
+1 604-714-4123
smason@telus.net

ABSTRACT
In an effort to better understand and fully characterize human interaction with biometrically-based interfaces, the BioGauges method and toolset are presented. BioGauges provide a mechanism for determining the range, reliability, and granularity of control possible for a user operating a biometrically-based interface. We first demonstrate the method with a study of ten able-bodied people characterizing two different continuous biometrically-based interfaces with a thresholded task. Then, we further demonstrate the method by assessing the spatial granularity of two continuous biometrically-based interfaces for five people with varying stages of paralysis due to amyotrophic lateral sclerosis (ALS).

Keywords
Biometrically-based interface, brain-computer interface, electroencephalography, functional near-infrared, galvanic skin response, controllability.