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Titolo	Exploring the Use of Eye Gaze Controlled Interfaces in Automotive Environments [[electronic resource] /] / by Pradipta Biswas
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Soggetti	User interfaces (Computer systems) Special purpose computers Automotive engineering Cognitive psychology User Interfaces and Human Computer Interaction Special Purpose and Application-Based Systems Automotive Engineering Cognitive Psychology
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Preface -- Introduction -- Preliminary Studies on Input Modalities -- Intelligent Multimodal Systems -- User Studies on Driving Simulators -- Preliminary Studies on Cognitive Load Detection -- User Studies on Saccadic Intrusion -- Concluding Remarks.
Sommario/riassunto	This book provides a concise study of eye gaze tracking as a direct controller of electronic displays and interfaces inside cars and other vehicles. The author explores the prospect of controlling a vehicle’s internal system via the drivers’ eye gaze and for the vehicles to analyse and respond to a drivers' change in cognitive load too. New algorithms tackling micro-saccadic eye movements and the inaccuracy in eye gaze tracking for controlling on-screen pointers are presented and explored. Multimodal fusion algorithms involving eye gaze and finger tracking systems are presented and validated and important results have been obtained on gaze controlled interfaces and visual responses whilst encountering oncoming road hazards. A set of user trials to validate

the algorithms involving driving simulators are also presented by the author. Exploring the Use of Eye Gaze Controlled Interfaces in Automotive Environments would of great importance to researchers and designers alike, within the fields of automotive design and engineering, human-computer interaction (HCI) and intelligent interfaces.