1. Record Nr. UNINA9910574078103321

Autore George Joseph Thachil

Titolo Human-computer interaction in game development with Python:

design and develop a game interface using HCI technologies and techniques / / Joseph Thachil George, Meghna Joseph George

Pubbl/distr/stampa New York, New York: ,: Apress L. P., , [2022]

©2022

ISBN 1-4842-8182-9

Descrizione fisica 1 online resource (335 pages) : illustrations (some color)

Disciplina 794.8151

Soggetti Computer games - Programming

Python (Computer program language)

Human-computer interaction

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Note generali Includes index.

Nota di contenuto Intro -- Table of Contents -- About the Authors -- About the Technical

Reviewer -- Introduction -- Chapter 1: Human-Computer Interaction Tools and Methodologies -- Fundamentals of Human-Computer Interaction -- Digging Deeper -- Designing the Interface -- Adaption and Interfaces -- Interfaces of Multi-Device -- Evolutionary Trends --Evaluation of Usability -- Bringing Usability and Accessibility Together -- Analysis of Task Situations -- Techniques and Tools for Human-Computer Interaction Development -- Techniques for Defining Specifications -- The Cycle of Tool Life and Methodologies Taxonomy -- Selecting Instruments, Techniques, and Resources -- The Eye Tracking Technique and Usability -- Eye Tracking Studies -- User Control -- Usability Testing -- Why Eye Tracking? -- Creating an Effective Interface -- Graphical User Interfaces -- Characteristics of User Interfaces -- Summary -- Chapter 2: Human-Computer Interaction Tools and Game Development -- Tools and Techniques for General Game Development -- The Video Game Interface -- Video Game Development and Interaction -- Video Game Users' Requirements and Needs -- Interactive UI Design for a Game -- Panel Design --Window Architecture -- Icon Design -- Color Development -- Eye-Tracking Techniques -- The Impact of Eye Tracking in Games -- Eye

Tracking in Games -- Project Planning and Development -Development Environment -- OpenCV -- Structure of OpenCV -- Haar
Cascade -- Face and Eye Recognition -- Modeling and Development -Conclusions and Problems -- Creating the Data Structure -- Modeling
and Development -- Conclusions and Problems -- Applying
Photographic Filters -- Modeling and Development -- Conclusions -Recognizing the Iris -- Modeling and Development -- Conclusions
and Problems -- Edge Detection -- Modeling and Development -Conclusions and Problems.
Parameter Analysis on Blur, CLAHE, and CANNY Filters -- Modeling
and Development -- Analysis -- Iris Recognition (2) -- Modeling
and Development -- Conclusions and Problems -- "Average Color"
Recognition -- Modeling and Development -- Conclusions -- Project
Analysis -- Data Analysis -- Precision -- Recall -- F-measure -- Result
-- Video #1 -- Video #2 -- Video #3 -- Video #4 -- Project
Conclusions -- Summary -- Chapter 3: Developing a Video Game --

Parameter Analysis on Blur, CLAHE, and CANNY Filters -- Modeling and Development -- Analysis -- Iris Recognition (2) -- Modeling and Development -- Conclusions and Problems -- "Average Color" Recognition -- Modeling and Development -- Conclusions -- Project Analysis -- Data Analysis -- Precision -- Recall -- F-measure -- Result -- Video #1 -- Video #2 -- Video #3 -- Video #4 -- Project Conclusions -- Summary -- Chapter 3: Developing a Video Game --Roles in the Video Game Industry -- Producers -- Publishers -- Game Developers -- Roles and Processes of Game Development -- Game Design -- Game Art Design -- Game Programming -- Game Testing --Software Development -- Game Development Phases -- Pre-Production Phase -- Outsourcing -- Production Phase -- Milestones: The Cornerstones of Development -- Post-Production Phase --Localization -- Fan Translation -- Summary -- Chapter 4: Turning Points in Game Development -- Game Engines -- Rendering Engine --Indie Video Games -- Crowdfunding -- The Case of Dreams: Developing a Game Within a Video Game -- Current Problems in the Development of Video Games -- Crunch Time -- Piracy --Programming Stages -- Paradigms and Programming Languages --Visual Programming -- Summary -- Chapter 5: Developing a Game in Python -- Python and Pygame -- Designing the Video Game --Development Team -- Game Design Document and Production --Game Menu -- Short Introduction to Pygame -- Game Interface -- The Player -- Powering Up -- The Enemies -- The Bosses -- Collision Management -- The Levels -- Summary -- Chapter 6: Game Development - Industry Standards -- Game Terminology -- Overall Design of the Game -- Frontend and Backend in Game Development --Verify the Token -- General Description of the Game's Services --Network Interfaces and Sequence Diagram for the Game Development Cycle -- Game Network Interfaces -- Sequence Diagrams. Casino Games -- Tournament Games -- Security of Online Games Through a Web Portal -- Secure Code for Games -- Secure by Design -- Security Control -- Summary -- Chapter 7: Gamification in Human-Computer Interaction -- Gamification Strategy -- Gamification Examples -- Common Risks and Mistakes -- Gamification in Education -- Aspects of the Game's Foundation -- The Different Game Categories -- Psychology and Motivation in Gamification -- The Two Different Types of Motivation -- Playing and Learning -- Gamification in the Classroom -- Factors that Make Gamification in the Classroom Easier -- How Can Gamification Help with Learning? -- Games-Based Learning vs Gamification -- Solutions for an Educational Game --Designing a Gamified Application -- Math Games for Kids -- Gamified Applications Dedicated to Training -- ClassDojo -- Methodology for Creating Gamified Applications -- Web Application -- Native Application -- Native App vs Web App -- The PhoneGap Framework --Why PhoneGap? -- PhoneGap's Architecture -- Anaconda Python

and the PyQT5 GUI Framework -- Anaconda Installation -- Linux -- Windows -- PyQT5 Installation -- Linux -- Windows -- PyQt5 Example

-- PvQT Events -- Drawbacks to Gamification -- Avoiding

the Drawbacks -- Summary -- Chapter 8: Human-Computer Interaction Research and Development -- Human-Computer Interaction with a Head-Mounted Display -- Human-Machine Interfaces: Future Development -- The Touchscreen Revolution -- Direct Communication with the Mind -- Gesture Engagement Taken to a New Level --Applications of Spatial Cognition Human Contact Research --Interaction with the Voice -- Interactions Between the Brain and the Computer -- Summary -- Chapter 9: Recommendations and Concluding Comments -- Recommendations -- Broad HCI Assessment Criteria -- Information and Communication Technology (ICT) Development -- New Trends. Promising HCI Technologies -- Important Considerations for Building

a User-Friendly Interface -- Final Thoughts on Game Design and HCI --Summary -- Index.

Sommario/riassunto

Deepen your understanding of human-computer interaction (HCI) in game development and learn how to develop video games that grab players and don't let them go. This book explores HCI design in computer games to maximize collaborative and interactive functions. You'll first gain a basic introduction to fundamental concepts and practices of HCI before diving into the fundamental concepts of game interface design and technology.