

Chapter 4

Empathetic Technology: Integrating Emotional Intelligence Into Assistive Devices for Aging Adults and Individuals With Disabilities

Durgansh Sharma

 <https://orcid.org/0000-0002-3688-400X>

Christ University, India

ABSTRACT

This chapter explores the emerging field of empathetic technology and its application in assistive devices for ageing adults and individuals with disabilities. It examines the integration of emotional intelligence into technological solutions, aiming to address functional needs and emotional and psychological well-being. The chapter delves into the foundations of emotional intelligence in technology, current applications, and future possibilities of empathetic assistive devices. It discusses key design principles, implementation strategies, and the challenges faced in developing these technologies. The text also covers methods for impact assessment and evaluation, with a strong emphasis on user-centred approaches, reassuring the audience about the thoroughness of the research. Mathematical models for quantifying emotional states, device performance, and user well-being are presented. Ethical considerations, including privacy concerns and cultural sensitivities, are addressed. The chapter focuses on the quality of life for ageing adults and individuals with disabilities.

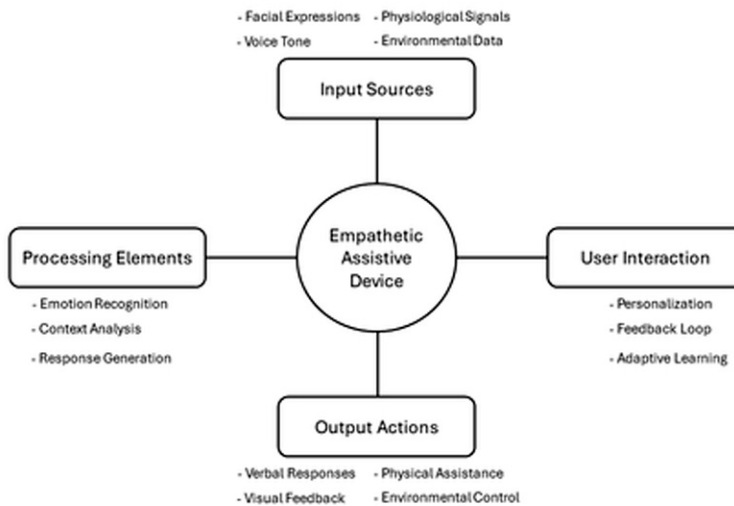
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1. INTRODUCTION

Empathetic technology represents aging adults and disabled individuals who approach a paradigm shift in the way assistive devices are used. Empathetic technology refers to devices and systems designed to recognize, interpret, and respond to human emotions, as Picard (2000) defined in her seminal work on affective computing. This integration of emotional intelligence into assistive technologies can revolutionize the field by enhancing the functional capabilities of these devices and their ability to provide emotional support and improve overall user experience. The importance of emotional intelligence in assistive devices is a critical aspect of human-computer interaction that has long been overlooked. By incorporating emotional intelligence, assistive technologies can better adapt to users' needs, provide more personalized support, and ultimately contribute to improved mental health and well-being. This chapter explores the multifaceted realm of empathetic technology and examines its foundations, current applications, design principles, implementation strategies, and future possibilities. By delving into these areas, we seek to provide a comprehensive understanding of this critical aspect of human-computer interaction, enlightening the audience about the importance of emotional intelligence in creating more effective and user-centered assistive devices for aging adults and individuals with disabilities.

The infographic in Figure 1 below provides a visual overview of how empathetic technology functions, from gathering input to processing information and providing output, while continuously interacting with and adapting to the user.

Figure 1. Empathetic technology ecosystem



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