TOPIC: PROSPECTS OF VIRTUAL, AUGMENTED AND MIXED REALITY

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Abstract: This article discusses the future development prospects of virtual reality (VR), augmented reality (AR) and mixed reality (MR) technologies. The problems that immersive technologies may pose in the period up to 2030 and their solutions are studied.

Keywords: virtual reality, augmented reality, mixed reality, immersive technologies, artificial intelligence, digital twins, vr/ar devices, interactive education, telemedicine, smart cities.

Introduction

Virtual reality (VR), augmented reality (AR), and mixed reality (MR) technologies are rapidly evolving and reshaping the way humans interact with technology. In this article, we explore the future prospects of these technologies and their impact on society.

The main directions of technological progress are currently the improvement of devices. These include miniaturization (smaller and lighter devices), display technologies (higher resolution and a wider field of view), sensor systems (more accurate tracking and motion detection), and battery power (longer operating time). In the integration of artificial intelligence, it is convenient to work with intelligent content, natural language processing, computer vision, the education sector, virtual laboratories, interactive educational materials, and distance learning. In medicine, it is convenient to manage virtual operations, telemedicine, and psychotherapy. In manufacturing and design, it is convenient to use virtual prototyping, remote maintenance, and intelligent assembly processes. New professions and economic opportunities include VR/AR developers (creating immersive experiences), 3D content creators (designing virtual worlds), and immersive marketing specialists (new marketing strategies).

Changes in society
- ✓ Remote collaboration - virtual offices and meetings
- ✓ Cultural heritage preservation - virtual replicas of historical sites
- ✓ Inclusive design - adaptive solutions for people with disabilities

Future challenges and solutions
- ✓ Computing power - processing complex graphics
- ✓ Network requirements - high speed and low latency
- ✓ Standardization - compatibility between different platforms

Ethical and legal issues
- ✓ Data security - protecting personal data

✓ Mental health - the impact of long-term immersion

✓ Legal norms - virtual property and data rights

One of the advanced scenarios by 2030 is widespread adoption

✓ Everyday devices - widespread use of AR glasses

✓ VR in the workplace - virtual offices becoming the norm

✓ Smart home integration - home management with MR technologies

Innovative applications

✓ Virtual travel - an alternative to real travel

✓ Digital art - immersive artworks and exhibitions

✓ Virtual economy - a market for virtual goods and services

Conclusion

Virtual, augmented, and mixed reality technologies are playing a significant role in shaping the future of humanity. They are revolutionizing not only entertainment and communication, but also education, medicine, industry, and many other aspects of everyday life. With the rapid development of technology, it is important to apply these innovations in a purposeful and responsible way. In the future, these technologies will further blur the line between the real and the virtual, providing opportunities to enrich the human experience and solve global problems.

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