Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing

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This chapter explores the role of information technology in enhancing women's safety, encompassing mobile apps, GPS tracking, and social media. It also introduces a proposed system leveraging GPS and Google Mobile Services to bolster women's safety. The review underscores technology's potential to empower women while acknowledging the challenges and constraints associated with its use for this purpose. Additionally, it outlines future improvements aimed at enhancing the precision and dependability of mobile apps for women's safety, addressing online harassment, and augmenting the accessibility of online resources. The chapter emphasizes the potential of technology to empower women and addresses the challenges and limitations of using technology for women's safety. It also suggests future enhancements for improving the accuracy and reliability of mobile apps for women's safety, addressing online harassment, and improving the accessibility of online resources. It advocates for research focusing on evaluating the effectiveness of different technologies focused on gender-based violence.

A digital mirror is an idea which ensures safety and security for the customers in the shopping malls. It's a virtual fitting: Customers may virtually try on apparel, accessories, and makeup using AI smart digital mirrors that employ augmented reality (AR) technology without changing into new clothes. This lessens the requirement for actual fitting rooms. Trailing every dress is so time taking, it even causes some skin diseases as many people try them and there is no guarantee that these trail rooms are

secured. Implementing a digital mirror that takes the outline of the posture of person standing before it and have the option of selecting what dresses you want to fit in, without actually trying it .There are many problems arises while using traditional trail rooms such as lack of privacy, hidden cameras, inadequate lighting, improper locks or no locks etc. our motto is to overcome these adverse effects and enhance safety and security for women in public places like shopping malls, restrooms, etc. using an AI tool.

IoT-enabled sensor nodes gather real-time data and employ machine learning techniques to enable remote monitoring and rapid response. To overcome these challenges, the proposed solution employs the opportunistic power best routine algorithm (OPA), a heuristic algorithm designed to extend the lifespan of sensor nodes in the wearable patches for women's safety. This algorithm eliminates redundant data loops between network patches, ultimately increasing the efficiency of the system. The effectiveness of this approach is evaluated based on metrics such as network lifespan, latency in data sensing, throughput, and error rates. Maximizing power usage through algorithms like OP2A and employing predictive analytics, the system can enhance network efficiency, reduce response times, and ultimately contribute to a safer environment for women.

The study explores the potential of AI technologies in wearables, specifically integrating natural language processing (NLP) for harassment detection and emotion recognition for personal protection. The wearables can identify users' emotional states, providing a comprehensive view of their well-being. NLP algorithms analyze linguistic patterns to detect and prevent harassment incidents. The study also addresses ethical aspects like potential biases in AI algorithms and privacy safeguards. The research envisions a future where technology not only ensures personal security but also fosters empathetic responses to emotional well-being challenges.

Resolving issues with women's safety is one significant application of technology. A smart and potent piece of safety gear, the safeguard wrist device is made to make women feel more secure and at ease in an array of circumstances. The safeguard wrist device functions as a constant guardian, providing quick access to help and support when needed. It is subtle and fashionable. This safety band is expected to revolutionise women's safety by enabling them to carry out their everyday activities with self-assurance and confidence thanks to its innovative features and intuitive design. In an increasingly complex society, women often worry about their safety when travelling, going to work, or going about their everyday business. By combining state-of-the-art features like hands-free calling, GPS tracking, and a panic button into a stylish bracelet, the safeguard wrist device addresses these problems. Designed to give women the finest protection possible, this adaptable safety item makes sure they feel powerful and in control at all times.

This chapter emphasizes the importance of artificial intelligence (AI) tools, analysis about the existing AI tools, and recommendations for future AI tools for women's safety. AI is experiencing significant growth and influence in the current era. Several key trends and developments highlight the role of AI in various domains: AI is being used for medical diagnosis, drug discovery, and patient care. Machine learning models are helping doctors analyse medical images, predict disease outcomes, and

Preface

Welcome to *Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing*. As editors of this comprehensive reference book, we are excited to present insightful chapters exploring the intricate intersection of technology, artificial intelligence, and women's safety.

In response to a book proposal from IGI-Global International Academic Publishers, Pennsylvania, USA, we embarked on a journey to compile a resource that delves into the transformative potential of AI tools and applications in ensuring women's safety.

Artificial intelligence has witnessed remarkable advancements in recent years, and its applications have extended to enhancing women's safety in various contexts. The chapters in this book traverse a spectrum of topics, ranging from using smart gadgets and applications for personal safety to utilizing AI-driven solutions in law enforcement and education. These innovations aim to empower women, providing them with independence and peace of mind in their daily lives.

These chapters aim to comprehensively understand how AI tools can be effectively harnessed to address women's safety concerns. Moreover, they explore the broader social, ethical, and legal implications of deploying these technologies.

While celebrating the potential of AI and emerging technologies to create a safer world for women, it is crucial to acknowledge and address the challenges. Concerns related to privacy, algorithmic bias, and ethical use of data demand careful consideration to ensure that these technologies are wielded ethically and without perpetuating existing inequities.

This book is intended for a diverse audience, including policymakers, government officials, researchers, engineers, and advocates working toward women's rights and safety. We hope the discussions within these pages will inspire further study, analysis, and assessment of AI and emerging technologies in women's safety.

Thank you for joining us on this intellectual journey, and we invite you to explore the rich insights that "Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing" has to offer.

ORGANIZATION OF THE BOOK

Chapter 1: A9G Based Women's Safety Device

In this chapter, Swati Paraskar and Rucha Jichkar delve into the imperative nature of women's safety as a human rights and social justice issue. They introduce an innovative A9G module-based safety device designed for women, exploring its functionalities, including sending notifications, alarms, or location updates to designated contacts. The chapter sheds light on the A9G module's features, such as GPS tracking, remote monitoring, and communication, highlighting its potential role in enhancing women's safety in various settings.

Chapter 2: AI-Based Advanced Surveillance Approach for Women Safety: Need for Every Women

Mohammad Shahnawaz Shaikh, Sivaram Ponnusamy, Syed Ibad Ali, Minakshi Wanjari, Sheetal Mungale, Asif Ali, and Imran Baig present a comprehensive exploration of information technology's role in elevating women's safety. This chapter introduces a proposed system utilizing GPS and Google Mobile Services, emphasizing the potential of technology to empower women. It discusses the challenges and constraints associated with technology's use for women's safety and provides insights into future improvements. The chapter advocates for research evaluating the effectiveness of different technologies focused on gender-based violence.

Chapter 3: AI-Enhanced Digital Mirrors: Empowering Women's Safety and Shopping Experience

Dr. Manjula Devarakonda Venkata, Venkateswari Karneedi, Sujana Sri Padmaja Yandamuri, and Naga Pradeepthi Siddi explore the concept of AI-enhanced digital mirrors to ensure safety in shopping malls. This innovative approach utilizes augmented reality (AR) technology, allowing customers to try on apparel and accessories virtually. The authors address the challenges associated with traditional fitting rooms, such as lack of privacy and security issues, proposing a solution that enhances safety and security for women in public places using AI smart digital mirrors.

Chapter 4: AI-Enhanced Optimization Algorithm for Body Area Networks in Intelligent Wearable Patches for Elderly Women's Safety

Swaminathan Kalyanaraman and Sivaram Ponnusamy present an IoT-enabled solution with sensor nodes for real-time data gathering and machine learning techniques. The proposed algorithm, the Opportunistic Power Best Routine Algorithm (OPA), aims to extend the lifespan of sensor nodes in wearable patches for women's safety. This chapter focuses on optimizing power usage, increasing system efficiency, and contributing to a safer environment for women.

Chapter 5: AI-Enhanced Wearable Devices Integrating Emotion Recognition for Personal Security and Natural Language Processing for Harassment Detection

Debosree Ghosh explores the potential of AI technologies in wearables, specifically integrating emotion recognition for personal protection and natural language processing (NLP) for harassment detection. The chapter envisions wearables identifying users' emotional states and fostering empathetic responses to emotional wellbeing challenges while addressing ethical aspects such as potential biases in AI algorithms and privacy safeguards.

Chapter 6: AI-Powered Wearables and Devices for Women's Safety

Kalyani Satone and Prof Pranjali Ulhe discuss the transformative role of AI-powered wearables and devices in enhancing women's safety. This chapter explores the features, benefits, challenges, and ethical considerations of AI-driven wearable technology designed specifically for women. It emphasizes the ongoing need for collaboration to ensure responsible and effective use of AI in wearables for women's safety.

Chapter 7: Challenges and Opportunities in Implementing AI-driven Surveillance for Women's Wellbeing

Swaminathan Kalyanaraman, Sivaram Ponnusamy, and Sangeetha Subramanian tackle the complexities of implementing AI-driven surveillance for women's wellbeing. The chapter examines privacy, ethics, and societal and technical obstacles, highlighting opportunities to empower women and enhance safety measures. Real-world case studies provide valuable insights, and the findings contribute recommendations for policies, ethical guidelines, and future research.

Chapter 8: Ensuring Women's Safety Using Wearable Technology (AI and IoT): AI Tools and Applications for Women's Safety

Using AI wearable technology, Devarakonda Manjula, Madhu Palli, and Tejasri Boddu address women's safety in public places. The chapter proposes a deep learning model, Mirasys VMS, to identify potential threats and offer a communication platform for women to connect with trusted contacts. It explores how wearable technology can empower women and contribute to their safety.

Chapter 9: Exploring the Role of AI in Overcoming Women's Sexual and Reproductive Wellbeing Barriers

Charvi Kumar, Poorva Agrawal, Gagandeep Kaur, Suhashini Chaurasia, and Sivaram Ponnusamy explore the potential of AI in overcoming barriers to women's sexual and reproductive wellbeing in the context of India. The chapter delves into the legal regime, socio-economic barriers, and patriarchal attitudes affecting pregnant individuals, emphasizing how AI might be a tool to address these challenges and enhance reproductive agency.

Chapter 10: Forestalling Cyberbullying and Online Harassment

Authored by Ms. Kritika, this chapter addresses the pervasive issues of cyberbullying and online harassment, with a focus on their disproportionate impact on women. The chapter highlights AI tools' role in combating these issues, using advanced sentiment analysis algorithms, user behavior analysis, and content moderation through natural language processing (NLP) to identify and prevent instances of harassment and explicit language.

Chapter 11: Minds at Ease: A Machine Learning Approach to Women's Mental Wellness in the Professional Arena

Satinderjit Gill, Anita Chaudhary, Bhisham Sharma, and Sivaram Ponnusamy discuss mental wellness in the professional arena. The chapter examines various artificial intelligence and machine learning techniques for detecting depression, anxiety, and other mental health issues. It surveys mental health monitoring using sensor data and emphasizes the potential of technology to contribute to mental wellbeing.

Chapter 12: Safeguard Wrist - Empowering Women's Safety

This chapter introduces the Safeguard Wrist device as a smart and powerful solution to address issues related to women's safety. The device offers quick access to help and support, providing women with a sense of security in various circumstances by being a constant guardian. The Safeguard Wrist is not just a safety device; it's a subtle and fashionable wearable, revolutionizing women's safety with its innovative features and intuitive design. In an era where safety concerns are prevalent, especially for women in their daily activities, this safety band aims to empower them confidently. By integrating advanced features such as hands-free calling, GPS tracking, and a panic button into a stylish bracelet, the Safeguard Wrist device addresses safety concerns comprehensively. It is designed to protect women, ensuring they feel powerful and in control.

Chapter 13: Securing Her Digital Footprint AI for Women's Safety

Authored by Jayapriya J, Vinay M, Blessy Louis, and Deepa S, this chapter emphasizes the growing role of artificial intelligence (AI) tools in securing women's digital footprint. It analyzes existing AI tools, trends, and developments, underlining AI's significant influence across various domains. The chapter also recommends future AI tools dedicated to women's safety in the digital realm.

Chapter 14: Studying the Effects of Internet of Things (IoT) Wearables on People's Awareness of Their Own Health

Swapnil Deshpande, Ram Nawasalkar, Navin Jambhekar, and Kartik Ingole explore the impact of Internet of Things (IoT) wearables on people's health awareness. The chapter analyzes the healthcare situation in rural India and introduces the "Rural Smart Healthcare System" (RSHS) for seniors. The study highlights how IoT devices can advance healthcare, improve efficiency, and contribute to better patient care.

Chapter 15: V-Safe-Anywhere - Empowering Women's Personal Security through Innovative Mobile and Wearable Technology

Vibha Bora and Bhanu Nagpure present an innovative smart IoT device, V-Safe-Anywhere, designed to enhance women's safety in various settings. The wearable device incorporates a camera, AI, and real-time location tracking to provide security features such as sending distress signals and capturing evidence during unforeseen

situations. The chapter aims to evaluate the potential impact of V-Safe-Anywhere on both crime prevention and investigation.

Chapter 16: Women's Safety and Empowerment Using AI Tools: Empowerment of Women

Prasanna Lakshmi Gandi, Pushpalata Aher Aher, and Sneha Chowdhary address the pressing issue of women's safety and empowerment. The chapter emphasizes the need for comprehensive strategies and introduces AI-driven predictive algorithms. These algorithms proactively alert women to potential dangers, contributing to their safety by anticipating and preventing harm. The authors advocate for the effective use of AI tools in addressing gender-based threats.

Chapter 17: wSafe24/7 Empowering Women's Personal Security through Innovative Mobile and Wearable Technology

Kanimozhi Kannabiran, Jenifer Mahilraj, and Rajalakshmi K present the wSafe24/7 smart security system, leveraging smartphones and wearables to enhance women's security. The user-friendly app incorporates features like tracked locations, SOS messages, and a virtual Bot for dual security levels. The chapter provides insights into the app's functionality, preventing distress identification errors and employing fuzzy logic for effective response.

IN CONCLUSION

As editors of this comprehensive reference book on *Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing*, we are delighted to present a collection of diverse and innovative chapters that delve into the intersection of technology, artificial intelligence, and women's wellbeing. The contributions from esteemed authors explore various topics, ranging from wearable device surveillance systems to AI-enhanced solutions for women's safety in various settings.

The chapters in this book not only shed light on the current state of technology but also offer forward-looking insights into the future of women's safety. The diverse topics covered, from AI-based surveillance and wearable devices to sophisticated audio detection systems and innovative safety gear, underscores the multifaceted nature of addressing women's safety concerns.

Throughout the chapters, there is a consistent emphasis on leveraging technology to empower women ensuring their safety in public spaces, workplaces, and online environments. The integration of AI tools, machine learning techniques, and IoT

devices serves as a testament to the transformative potential of technology in creating a safer and more inclusive world for women.

However, the book also acknowledges the ethical considerations and challenges of implementing these technologies. Discussions around privacy, algorithmic bias, and the responsible use of data underscore the importance of addressing concerns to ensure that these tools contribute positively to women's safety without perpetuating existing inequities.

In conclusion, *Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing* is a valuable resource for researchers, policymakers, technologists, and advocates committed to fostering a safer environment for women. We hope the insights this book shares spark further discussions, research, and advancements in the field, ultimately contributing to a world where women can live, work, and thrive without fear.

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Many people need support, direction, and participation in the collaborative process of writing a book. As we complete our work on the *Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing*, we sincerely thank everyone who helped make this endeavor possible.

We express our heartfelt gratitude to the Supreme Being, our Parents, and our extended Family for their continuous love, assistance, and counsel throughout our lives. Our appreciation extends to our beloved family members who have stood by us in our professional journeys, contributing to the refinement of this book. The steadfast encouragement, belief in our abilities, and enduring affection you have shown us have served as the bedrock that propelled us forward in this undertaking.

We want to express our sincere gratitude to every author for contributing their insightful opinions, vast experience, and thorough research to this book. Your enthusiasm for social welfare applications and eagerness to impart knowledge have greatly aided in developing a comprehensive and informative resource. It was determined that every chapter in the book was necessary; otherwise, it wouldn't have been complete.

Furthermore, we acknowledge and value the meticulous efforts and precious time invested by every member of our editorial board and chapter reviewers in enhancing the quality of the information within the book. We extend our thanks to the reviewers who diligently scrutinized the chapters, provided constructive criticism, and played a pivotal role in elevating the overall standard of the content. Your expertise and discerning analysis have been instrumental in enhancing the scholarly merit of this book.

We want to thank the IGI Global editorial and production teams for their hard work in making this book a reality. Your dedication to excellence, professionalism, and attention to detail have benefitted the entire publishing process.

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We appreciate our coworkers' and peers' support as we prepared this book. Your support, conversations, and experiences with us have shaped our viewpoints and improved the information in our work.

We want to express our sincere gratitude to everyone who helped write this book, whether they were directly involved or not. *Wearable Devices, Surveillance Systems, and AI for Women's Wellbeing* is the result of our collaborative efforts, and anticipating significant value, we believe that this resource will be instrumental in enhancing women's safety through AI technology.

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A9G-Based Women's Safety Device

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ABSTRACT

Ensuring women's safety is not just a women's issue, it's a matter of human rights and social justice Women safety device is helpful and practical instrument for safeguarding the safety and well-being of women.The A9G module-based women's safety device will be used in the ladies safety gadget. This device will Send notifications, alarms or location updates to the parent's mobile or register mobile number . The A9G is a cellular IoT (Internet of Things) module It is designed for GPS tracking, remote monitoring, and communication. A notable feature of the A9G module is its built-in GPS (Global Positioning System) functionality.The A9G module provides cellular connectivity, allowing it to connect to the internet. This enables IoT devices to send and receive data remotely. GPS Functionality allows devices to determine their precise location, making it suitable for tracking applications. The system includes Arduino ATMEGA328 microcontroller, Switch button, Vibration sensor, Force sensor, ESP32 Wi-Fi module, and Mobile application. This safety device is a tool for women's security.

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Chapter 2
AI-Based Advanced Surveillance Approach for Women's Safety

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ABSTRACT

This chapter explores the role of information technology in enhancing women's safety, encompassing mobile apps, GPS tracking, and social media. It also introduces a proposed system leveraging GPS and Google Mobile Services to bolster women's safety. The review underscores technology's potential to empower women while acknowledging the challenges and constraints associated with its use for this purpose. Additionally, it outlines future improvements aimed at enhancing the precision and dependability of mobile apps for women's safety, addressing online harassment, and augmenting the accessibility of online resources. The chapter

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Chapter 3
AI-Enhanced Digital Mirrors: Empowering Women's Safety and Shopping Experiences

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ABSTRACT

A digital mirror is an idea which ensures safety and security for the customers in the shopping malls. It's a virtual fitting: Customers may virtually try on apparel, accessories, and makeup using AI smart digital mirrors that employ augmented reality (AR) technology without changing into new clothes. This lessens the requirement for actual fitting rooms. Trailing every dress is so time taking, it even causes some skin diseases as many people try them and there is no guarantee that these trail rooms are secured. Implementing a digital mirror that takes the outline of the posture of person standing before it and have the option of selecting what dresses you want to fit in, without actually trying it .There are many problems arises while using traditional trail rooms such as lack of privacy, hidden cameras, inadequate lighting, improper locks or no locks etc. our motto is to overcome these adverse effects and enhance safety and security for women in public places like shopping malls, restrooms, etc. using an AI tool.

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Chapter 4
AI-Enhanced Optimization Algorithm for Body Area Networks in Intelligent Wearable Patches for Elderly Women's Safety

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ABSTRACT

IoT-enabled sensor nodes gather real-time data and employ machine learning techniques to enable remote monitoring and rapid response. To overcome these challenges, the proposed solution employs the opportunistic power best routine algorithm (OPA), a heuristic algorithm designed to extend the lifespan of sensor nodes in the wearable patches for women's safety. This algorithm eliminates redundant data loops between network patches, ultimately increasing the efficiency of the system. The effectiveness of this approach is evaluated based on metrics such as network lifespan, latency in data sensing, throughput, and error rates. Maximizing power usage through algorithms like OP2A and employing predictive analytics, the system can enhance network efficiency, reduce response times, and ultimately contribute to a safer environment for women.

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Chapter 5
AI-Enhanced Wearable Devices Integrating Emotion Recognition for Personal Security and Natural Language Processing for Harassment Detection

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ABSTRACT

The study explores the potential of AI technologies in wearables, specifically integrating natural language processing (NLP) for harassment detection and emotion recognition for personal protection. The wearables can identify users' emotional states, providing a comprehensive view of their well-being. NLP algorithms analyze linguistic patterns to detect and prevent harassment incidents. The study also addresses ethical aspects like potential biases in AI algorithms and privacy safeguards. The research envisions a future where technology not only ensures personal security but also fosters empathetic responses to emotional well-being challenges.

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Chapter 6
AI-Powered Wearables and Devices for Women's Safety

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ABSTRACT

The advent of AI-powered wearables and devices has revolutionized personal safety, offering women innovative tools to enhance their security and well-being. This chapter aims to explore the role of AI in wearables designed specifically for women's safety, discussing their features, benefits, challenges, and ethical considerations. It also helps to explore the emerging landscape of AI-driven wearable technology designed specifically to address women's safety concerns. It will delve into the various types of wearables and devices, their functionalities, user experiences, and the impact they have on women's safety. It will emphasize the transformative potential of these technologies in empowering women and enhancing their security. Additionally, it will highlight the ongoing need for collaboration between technology developers, policymakers, and users to address challenges and ensure the responsible and effective use of AI in wearables for women's safety.

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Chapter 7
Challenges and Opportunities in Implementing AI-Driven Surveillance for Women's Wellbeing

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ABSTRACT

This research explores the difficulties and positive aspects of using AI-driven surveillance to improve women's wellbeing. The authors delve into the challenges, such as concerns about privacy and ethics, as well as societal and technical obstacles. On the flip side, the authors highlight opportunities, emphasizing how these technologies can empower women and enhance safety measures. The study incorporates case studies to provide real-world examples and extracts lessons from both successful and challenging implementations. Ethical considerations, including privacy and fairness, are thoroughly examined. The findings contribute recommendations for policies, ethical guidelines, and potential areas for future research in this evolving field. Overall, this research aims to shed light on the complex landscape of AI-driven surveillance for women's wellbeing, offering insights to guide future developments and implementations.

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Chapter 8
Ensuring Women's Safety Using Wearable Technology (AI and IoT): AI Tools and Applications for Women's Safety

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ABSTRACT

Women's safety is a crucial and urgent social issue that focuses on preserving the physical, emotional, and psychological well-being of women in a variety of contexts, including public places, workplaces, residences, and online surroundings. Women may find themselves in dangerous situations due to a lack of awareness and education. This chapter assures the safety of women in public places by identifying potential attackers with acids, machine guns, and chloroform materials nearby using AI wearable technology. It also includes the deep learning model Mirasys VMS to identify the alone women or women in distress. By allowing women to communicate with trusted contacts, wearable technology might provide them with a sense of security. By giving women new means to defend themselves and get assistance in an emergency, wearable technology has emerged as a promising tool for improving women's safety. Women can avoid difficult circumstances by being adequately informed about wearable technology and its use.
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Chapter 9

Exploring the Role of AI in Overcoming Women's Sexual and Reproductive Wellbeing Barriers

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ABSTRACT

This chapter aims to explore the feasibility of applying AI to help resolve issues stemming from the sociolegal realities of pregnant persons in India, by first examining the legal regime of the country when it comes to guaranteeing reproductive agency and reproductive wellbeing, and by then discussing the various barriers that exist for pregnant persons seeking abortions. While some of these barriers are legal,

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Chapter 10
Forestalling Cyber Bullying and Online Harassment

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ABSTRACT

Cyberbullying and online harassment have become pervasive issues, disproportionately affecting various demographics, with women being particularly vulnerable. This poses significant threats to individuals' well-being, mental health, and overall safety in the digital realm. AI tools offer a multifaceted approach with the use of advanced sentiment analysis algorithms, user behaviour analysis, and content moderation that can scan and interpret online content, identifying instances of harassment, explicit language, or threatening behavior with the help of natural language processing (NLP) to enable understand the content in a more nuanced manner.

INTRODUCTION

Cyber Bullying

Cyber bullying(Chandrasekaran et al., 2022) is a deliberate and persistent use of digital technologies in virtual space transcending the physical borders and seeping into the fabric of everyday life to harass, threaten or intimidate people, providing a veil of anonymity that emboldens perpetrators, allowing them to target victims with a sense of detachment by means of hurtful messages, derogatory comments and malicious spread of rumors and the creation of fake profiles. The immense

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Chapter 11
Minds at Ease:
A Machine Learning Approach to Women's Mental Wellness in the Professional Arena

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ABSTRACT

Depression, stress, anxiety, or other mental illnesses are crucial problems today in this society. Because of these problems, anybody can lose interest in general routine activities and attempt suicide. That's why it is a very serious problem. Nobody wants to discuss with doctors or anybody else their personal problems that are the major reasons of these issues. So, there is a need for an automated system for different age groups that can help in detecting these types of problems. No studies have been proposed in this regard to detect these types of problems. Here in the current study,

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Chapter 12
Safeguard Wrist:
Empowering Women's Safety

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ABSTRACT

Resolving issues with women's safety is one significant application of technology. A smart and potent piece of safety gear, the safeguard wrist device is made to make women feel more secure and at ease in an array of circumstances. The safeguard wrist device functions as a constant guardian, providing quick access to help and support when needed. It is subtle and fashionable. This safety band is expected to revolutionise women's safety by enabling them to carry out their everyday activities with self-assurance and confidence thanks to its innovative features and intuitive design. In an increasingly complex society, women often worry about their safety when travelling, going to work, or going about their everyday business. By combining state-of-the-art features like hands-free calling, GPS tracking, and a panic button

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Chapter 13
Securing Her Digital Footprint:
AI for Women's Safety

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ABSTRACT

This chapter emphasizes the importance of artificial intelligence (AI) tools, analysis about the existing AI tools, and recommendations for future AI tools for women's safety. AI is experiencing significant growth and influence in the current era. Several key trends and developments highlight the role of AI in various domains: AI is being used for medical diagnosis, drug discovery, and patient care. Machine learning models are helping doctors analyse medical images, predict disease outcomes, and personalize treatment plans. Self-driving cars and drones are utilizing AI algorithms for navigation, obstacle detection, and decision-making. These technologies are advancing transportation and logistics. Natural language processing models like GPT-3 are transforming language-related tasks, from chatbots and virtual assistants to content generation, translation, and sentiment analysis. This chapter highlights the AI tools that exist for women's safety in the digital world and future apps needs for the same.

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Chapter 14
Studying the Effects of Internet of Things (IoT) Wearables on People's Awareness of Their Own Health

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ABSTRACT

Internet of things (IoT) devices and contributions will advance healthcare to a more aware age while saving time and lives with extreme precision. Remote healthcare expansion spurs Wi-Fi gadget development. Next-generation emergency room prototypes can already assess patients' overall health. The study analyzes rural India's healthcare situation and suggests the "rural smart healthcare system" (RSHS) for seniors. IoT technology permits intercommunication and may notify the clinic personnel based solely on the patient's vitals. The healthcare industry becomes more efficient, cheaper, and better at patient care. Modern technology includes milestone healthcare technology breakthroughs that lead to cloud computing and big data. Volume, diversity, speed, and authenticity define cloud computing.

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Chapter 15
V-Safe-Anywhere:
Empowering Women's Safety With Wearable AI and IoT Technology

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ABSTRACT

Women's safety is a critical and significant societal concern. Enhancing their safety necessitates a comprehensive strategy that encompasses various facets, including social awareness, educational initiatives, community involvement, and the integration of technological solutions. This chapter introduces an innovative smart IoT device-V-Safe-Anywhere, designed to enhance women's safety in various settings. V-Safe-Anywhere is a wearable device equipped with a camera that captures images periodically while the user is on the move. During unforeseen conditions, the 12 previous instance images which are always stored for security purpose will be sent on server, and video capturing of the scene starts immediately. Using AI, it will detect a face and/or the license plate of a vehicle if it is being used in the crime. Device also sends the real time location of the crime to the guardian and police. The study aims to elucidate its potential impact on women's safety, evaluating its role in both crime prevention and investigation.

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Chapter 16
Women's Safety and Empowerment Using AI Tools

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ABSTRACT

Even as we celebrate women's knowledge today, their true empowerment globally still lags behind. Women continue to face suppression and minority treatment in workplaces, a consequence of gender inequality and narrow mindsets among humans. From physical assaults and domestic abuse to sexual harassment, trafficking, and gender-based crimes, women face a spectrum of threats solely because of their gender. Women are often being objectified, leading to both physical and psychological harm, a disturbing reality that persists in society. Safeguarding women's rights and dignity is an urgent priority that requires immediate attention. Despite the availability of various technologies aimed at women's safety, they lack efficacy and fail to provide timely assistance when needed. This goal is to create AI-driven predictive algorithms with probabilistic models that proactively alert women before potential dangers, ensuring their safety by anticipating and preventing potential harm.

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Chapter 17
wSafe24/7: Empowering Women's Personal Security Through Innovative Mobile and Wearable Technology

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ABSTRACT

Addressing women's safety is critical, and technology offers a solution. The wSafe24/7 smart security system leverages smartphones and wearables, enhancing personal security through both hardware and software. This user-friendly app enables users to send tracked locations and SOS messages, utilizing fingerprint scanning with or without sensors, and includes a virtual Bot feature. With dual security levels—user-activated and automatic triggers—the app prevents inaccurate distress identification and message transmission errors. The panic key activates vital modules like heart rate and temperature monitors, scream and fall detection, and accelerometers, employing fuzzy logic for effective response.

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