

# SOCIAL ROBOTICS

Presented by

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# WHAT IS SOCIAL ROBOTICS ?

Social robotics is a field of robotics that focuses on designing, developing robots that can interact with humans in a social way.



# HUMAN-ROBOT INTERACTION

Human-robot interaction (HRI) in social robotics focuses on how robots and humans communicate, work together, and establish relationships in social contexts.

## HRI ALGORITHM



# Key aspects of Human-robot interaction

- Emotional and social cues
- Natural communication
- Behavioral Adaptability
- Cooperation and assistance



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# TYPES OF SOCIAL ROBOTS

## 1. HUMANOID ROBOTS:

Designed to resemble humans in both appearance and behavior.



## 2 SOCIAL COMPANION ROBOTS:

Designed for emotional support and companionship.

## 3. SERVICE ROBOTS:

Assist with practical tasks in customer service and public environments.

#### 4. Educational robots:

Designed to aid in teaching and learning.

#### 5. Entertainment robots

Used for entertainment & fun.



# BENEFITS OF SOCIAL ROBOTICS

- Creating New Forms of Entertainment
- Boosting Mental Health
- Customer service and assistance

- **Assisting with Healthcare and Wellbeing**
- **Increased accessibility**
- **Companionship and Emotional Support**

# REALWORLD EXAMPLES

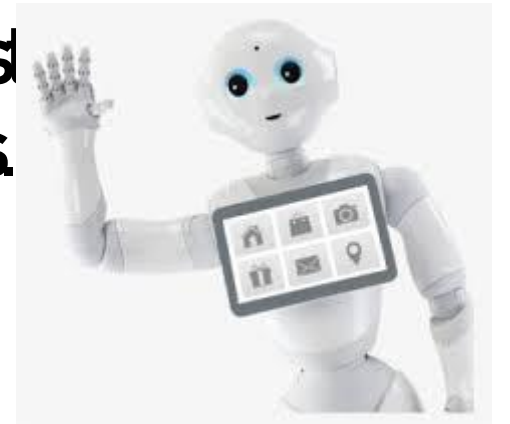
## 1.SOPHA

- Humanoid appearance
- Capable of recognizing faces human emotions through facial expressions.
- Effective human robot interaction



## 2 PEPPER

- Pepper is a popular social robot known for understanding and responding to human emotions.
- It's widely used in customer service, healthcare, and home assistance.
- Its emotional recognition abilities make it a key milestone in improving human experience across various domains.



# APPLICATIONS OF SOCIAL ROBOTS

## 1. HEALTHCARE AND ELDERLY CARE

- **Assistive care:** Assist with daily living tasks, such as bathing, dressing, and feeding.
- **Companionship:** Provide companionship and social interaction for patients.

- Rehabilitation: Aids in physical rehabilitation, such as helping patients regain strength.
- Healthcare professional assistance



## 2 EDUCATION

- Teaching assistants: Assist teachers with grading, lesson planning, and student engagement.
- Language learning: Help language learners practice conversational skills and pronunciation.
- STEM education: Used to teach STEM concepts, like programming, robotics, and engineering.
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### 3. HOME AND DOMESTIC ASSISTANCE



- **Companionship:** Provide companionship and social interaction for the elderly, disabled, or those living alone.
- **Household chores:** Assist with household chores, such as cleaning, cooking, and laundry.
- **Home security:** Used to monitor and secure homes, detecting potential threats and alerting authorities.



# CHALLENGES AND LIMITATIONS

- High Development and Operational Costs
- Job Displacement Concerns
- Ethical and Privacy Concerns
- Physical Limitations
- Acceptance and Trust

# FUTURE OF SOCIAL ROBOTS

- More Natural and Human-Like Interactions
- Autonomous Learning and Adaptation
- Advanced Emotional and Social Intelligence



# CONCLUSION

In conclusion, social robotics has the potential to greatly enhance human life by improving interactions in areas like healthcare, education, and customer service. While there are challenges to address, such as ethical concerns and acceptance, the continued development of social robots promises exciting opportunities for the future, fostering collaboration between humans and machines for a better and more connected world.

THANK YOU

