


# Chapter 3

## AI as a Guardian: Leveraging Machine Learning to Detect and Prevent Cyberbullying

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### ABSTRACT

*In the digital age, cyberbullying is a pervasive problem that requires AI to detect and prevent. This chapter emphasizes the importance of stakeholder collaboration, parent, school, and community empowerment, and AI-driven digital well-being programs in establishing a more safe digital future. AI-driven moderation tools are essential for online interaction management, but ethics, transparency, and equity are required. An effective cyberbullying prevention strategy includes privacy protection, algorithmic bias elimination, and digital citizenship education. Improved emotional intelligence, tailored well-being helpers, and decentralized safety protocols will help AI create safer online settings. This chapter stresses the importance of combining technical innovation with human-centered governance to combat cyberbullying.*

### UNDERSTANDING CYBERBULLYING IN THE DIGITAL AGE

#### 1.1 The Evolution of Bullying: From Physical to Digital Spaces

Bullying has been a social issue throughout history (Yin et al., 2024; Hammarén, 2022). In schools, businesses, and communities, bullying typically involves physical, verbal, or social isolation. The internet and digital communication tools have transformed bullying into cyberbullying, an aggressive, intentional act committed

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online. This revolution has changed bullying's character, impact, and preventative efforts, making it a major concern in digital society.

## Historical Overview of Bullying

History has observed bullying as a social dominance tool in hierarchical institutions (Lee, 2023). Early societies bullied people using physical force, verbal abuse, and exclusion. Socialization, especially among children and teenagers, included bullying for centuries.

In the 1970s, Swedish psychologist Dan Olweus pioneered school bullying research (Cretu & Morandau, 2024). His research proved that bullying is a chronic pattern of hostility that can have serious psychological effects. Schools, educators, and governments started anti-bullying programs to limit its prevalence. Despite these efforts, bullying evolved with technology.

## The Shift to Cyberbullying with the Rise of the Internet

Social media, the internet, and mobile devices changed human connection in the late 20th century (Rashid & Kausik, 2024). Digital transformation increased bullying and made it harder to control. Unlike school or job bullying, cyberbullying may happen anywhere.

Cyberbullying includes social media harassment, threatening messages, rumors, identity theft, and doxxing (unauthorized publication of private information) (Scheithauer et al., 2021; Fulantelli et al., 2022). Cyberanonymity empowers thieves to target victims remotely. Cyberbullying is difficult to stop because online content spreads quickly.

## Key Differences Between Traditional and Online Bullying

1. Cyberbullying is unavoidable for victims due to its widespread presence across various digital channels, unlike conventional bullying of localized locations.
2. **Lack of Accountability:** Cyberbullying perpetrators can hide behind phony profiles, making identification and accountability more difficult than in-person bullying.
3. **Increased Impact and Wider Audience:** Online harassment can cause psychological suffering for victims due to instant sharing. Digital information can last forever, prolonging its impact.

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