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"THE STUDY ON USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES TO SUPPORT DELIBERATE, REPEATED AND HOSTILE BEHAVIOR BY AN INDIVIDUAL OR GROUP THAT IS INTENDED TO HARM OTHERS"

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ABSTRACT

Certain characteristics inherent in on-line technologies increase the likelihood that they will be exploited for deviant purposes. Unlike physical bullying, electronic bullies can remain virtually anonymous using temporary email accounts, pseudonyms in chat rooms, instant messaging programs, cell-phone text messaging, and other Internet venues to mask their identity; this perhaps frees them from normative and social constraints on their behavior.

Additionally, electronic forums often lack supervision. While chat hosts regularly observe the dialog in some chat rooms in an effort to police conversations and evict offensive individuals, personal messages sent between users (such as electronic mail or text messages) are viewable only by the sender and the recipient, thereby outside the regulatory reach of such authorities. In addition, when teenagers know more about computers and cellular phones than their parents or guardians, they are therefore able to operate the technologies without concern that a parent will discover their experience with bullying (whether as a victim or offender).

Another factor is the inseparability of a cellular phone from its owner, making that person a perpetual target for victimization. Users often need to keep their phone turned on for legitimate purposes, which provides the opportunity for those with malicious intentions to engage in persistent unwelcome behavior such as harassing telephone calls or threatening and insulting statements via the cellular phone's text messaging capabilities. Cyber-bullying thus penetrates the walls of a home, traditionally a place where victims could seek refuge from other forms of bullying.

Moreover, bullies can gang up on their victims on electronic pages more efficiently than they do in traditional bullying, since there is no limit to the number of people who can join in, following a bullying statement.

KEYWORDS: Inseparability, Bullying, Cyber, Victims

INTRODUCTION WITH ITS RELEVANCE

- The Internet is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail.

- Cyber-Bullying is "the use of information and communication technologies to support deliberate, repeated, and hostile behavior by an individual or group that is intended to harm others". As it has become more common in society, particularly among young people, legislation and awareness campaigns have arisen to combat it.
- Cyber-bullying has been defined as "when the Internet, cell phones or other devices are used to send or post text or images intended to hurt or embarrass another person". Other researchers use similar language to describe the phenomenon.

LIST OF REVIEW OF THE RELATED LITERATURE ALONG WITH RESEARCH GAPS

- Cyber-bullying can be as simple as continuing to send e-mail to someone who has said they want no further contact with the sender, but it may also include threats, sexual remarks, pejorative labels (i.e., hate speech), ganging up on victims by making them the subject of ridicule in forums, and posting false statements as fact aimed at humiliation.
- Cyber-bullies may disclose victims' personal data (e.g. real name, address, or workplace/schools) at websites or forums or may pose as the identity of a victim for the purpose of publishing material in their name that defames or ridicules them. Some cyber-bullies may also send threatening and harassing emails and instant messages to the victims, while other post rumors or gossip and instigate others to dislike and gang up on the target.
- Kids report being mean to each other online beginning as young as 2nd grade. According to research, boys initiate mean online activity earlier than girls do. However, by middle school, girls are more likely to engage in cyber-bullying than boys do. Whether the bully is male or female, their purpose is to intentionally embarrass others, harass, intimidate, or make threats online to one another. This bullying occurs via email, text messaging, posts to blogs, and Web sites.
- Though the use of sexual remarks and threats are sometimes present in cyber-bullying, it is not the same as sexual harassment and does not necessarily involve sexual predators.
- With the aim of inception of CBFS in the cyber-bullying, the first step we have decided is to find out those limitations in the current filters methodologies, work searching methodology, which make the result unsatisfactory and not up to the expectations up certain level. It will restrict user to upload this type words or images.

SOME OF THE KEY FEATURES OF TODAY'S FILTERS ARE

Feature Benefits No Software or Configuration

- Use the service from any computer
- No changes to your DNS settings
- Very simple and easy to use

Disposable Email Addresses

- Keep your private email address secret

- Stop spam with our custom mail filters
- Discover who is spamming you

Custom Spam Filter

- Filter spam sent to your Mail Filter account
- Filter spam in your current email account
- Customize the spam filter sensitivity

Send Anonymous Email

- Don't give out your personal email address
- Send email from a disposable email address
- Send messages to people from any computer

Flexible Mail Filters

- Block particular kinds of emails
- Forward and copy emails to other people
- Send auto-replies when you're on holiday

Read Email via RSS Feeds

- Easy to see if you have new email
- Check that your filters are working
- Integrate Mail Filter into your life

RATIONALES OF THE STUDY/ JUSTIFICATION FOR SELECTION OF THE PROBLEM

- "CBFS" will be a new application of recent advances in information retrieval (IR), natural language processing, artificial intelligence, Database Intelligence and other fields. It will be the intelligent filter system that aims to find the words, images etc., not only matching keywords, but by actually matching meaning in sentences initially up to certain level.
- Index-based semantic search requires more data processing, such as numerous synonyms, hyponyms, multiple linguistic readings, and other semantic information, both on queries and in the index. In addition, some of the algorithms can be super-linear, such as matching co-references across a sentences, chat or documents.
- "A CBFS will be a **data-driven** as well as **expectation-driven** and **adaptable** information matching system that would provides **information interpretation** through **decision making constructs** properly adjusted and incorporated with the existing powerful points of today's filter, most prominent of which being **A Cyber-bullying filtering system "** After having formally designed the definition of **CBFS**, I'm in a position to be equipped with the tools and techniques that will be used in the design of **CBFS**.

RESEARCH QUESTIONS, OBJECTIVES, HYPOTHESIS

- **CBFS** is not like simple filter, aim this system is providing online utility to check their incoming text, images, docs, etc. automatically as well as optional. Once this tool will uploaded to the system either on web application or desktop application. User can enable or disable as feature of that particular system.
- In the summer of 2008, researchers Sameer Hinduja (Florida Atlantic University) and Justin Patchin (University of Wisconsin-Eau Claire) published a book on cyber-bullying that summarized the current state of cyber-bullying research. (*Bullying Beyond the Schoolyard: Preventing and Responding to Cyberbullying*).[6] Their research documents that cyber-bullying instances have been increasing over the last several years. They also report findings from the most recent study of cyber-bullying among middle-school students. Using a random sample of approximately 2000 middle-school students from a large school district in southern United States, about 10% of respondents had been cyber-bullied in the previous 30 days while over 17% reported being cyber-bullied at least once in their lifetime.[6] While these rates are a bit lower than some of the findings from their previous research, Hinduja and Patchin point out that the earlier studies were predominantly conducted among older adolescents and Internet samples. That is, older youth use the Internet more frequently and are more likely to experience cyber-bullying than younger children.

Surveys and Statistics

In September 2006, ABC News reported on a survey prepared by I-Safe. Org. This 2004 survey of 1,500 students between grades 4-8 reported:

- 42% of kids have been bullied while online. One in four has had it happen more than once.
- 35% of kids have been threatened online. Nearly one in five had had it happen more than once.
- 21% of kids have received mean or threatening e-mails or other messages.
- 58% of kids admit someone has said mean or hurtful things to them online. More than four out of ten say it has happened more than once.
- 58% have not told their parents or an adult about something mean or hurtful that happened to them online.

A 2006 survey by Harris Interactive reported:

- 43% of U.S. teens having experienced some form of cyber-bullying in the past year.

Similarly, a Canadian study found:

- 23% of middle-scholars surveyed had been bullied by e-mail
- 35% in chat rooms
- 41% by text messages on their cell phones
- Fully 41% did not know the identity of the perpetrators.

The Youth Internet Safety Survey-2, conducted by the Crimes against Children Research Center at the University

of New Hampshire in 2005, found that 9% of the young people in the survey had experienced some form of harassment. The survey was a nationally representative telephone survey of 1,500 youth 10–17 years old. One third reported feeling distressed by the incident, with distress being more likely for younger respondants and those who were the victims of aggressive harassment (including being telephoned, sent gifts, or visited at home by the harasser). Compared to youth not harassed online, victims are more likely to have social problems. On the other hand, youth who harass others are more likely to have problems with rule breaking and aggression. Significant overlap is seen — youth who are harassed are significantly more likely to also harass others.

Hinduja and Patchin completed a study in the summer of 2005 of approximately 1,500 Internet-using adolescents and found that over one-third of youth reported being victimized online, and over 16% of respondents admitted to cyber-bullying others. While most of the instances of cyber-bullying involved relatively minor behavior (41% were disrespected, 19% were called names), over 12% were physically threatened and about 5% were scared for their safety. Notably, fewer than 15% of victims told an adult about the incident.

Additional research by Hinduja and Patchin found that youth who report being victims of cyber-bullying also experience stress or strain that is related to offline problem behaviors such as running away from home, cheating on a school test, skipping school, or using alcohol or marijuana. The authors acknowledge that both of these studies provide only preliminary information about the nature and consequences of online bullying, due to the methodological challenges associated with an online survey.

According to a 2005 survey by the National Children's Home charity and Tesco Mobile [16] of 770 youth between the ages of 11 and 19, 20% of respondents revealed that they had been bullied via electronic means. Almost three-quarters (73%) stated that they knew the bully, while 26% stated that the offender was a stranger. 10% of responders indicated that another person has taken a picture and/or video of them via a cellular phone camera, consequently making them feel uncomfortable, embarrassed, or threatened. Many youths are not comfortable telling an authority figure about their cyber-bullying victimization for fear their access to technology will be taken from them; while 24% and 14% told a parent or teacher respectively, 28% did not tell anyone while 41% told a friend.

A survey by the Crimes against Children Research Center at the University of New Hampshire in 2000 found that 6% of the young people in the survey had experienced some form of harassment including threats and negative rumours and 2% had suffered distressing harassment.

Reporting on the results from a meta analysis from European Union countries, Hasebrink et al. (2009) estimated (via median results) that approximately 18% of European young people had been "bullied/harassed/stalked" via the internet and mobile phones. Cyber-harassment rates for young people across the EU member states ranged from 10% to 52%.

The nation-wide Australian Covert Bullying Prevalence Survey (Cross et al., 2009) assessed cyber-bullying experiences among 7,418 students. Rates of cyber-bullying increased with age, with 4.9% of students in Year 4 reporting cyberbullying compared to 7.9% in year nine. Cross et al., (2009) reported that rates of bullying and harassing others were lower, but also increased with age. Only 1.2% of Year 4 students reported cyber-bullying others compared to 5.6% of Year 9 students.

LIMITATIONS/SCOPE OF KEYWORDS

- The inference rules often make plausible conclusions according to available knowledge, and consequently the conclusions may conflict with new information.
- The system may have explicit or implicit contradictions among pieces of knowledge and derived conclusions.

METHODOLOGY

Research Method with Justification

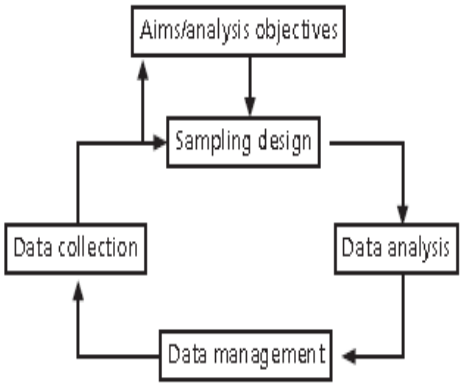

Figure 1: The Iterative Qualitative Research Process

Population along with its Size

Sample Size, Sample Selection Procedure, Sampling Techniques

- **Sample Size:** Develop a test application and implement at college on its intranet site. This institute has almost 500 students including staff members.
- **Sample Selection Procedure: Cluster Random Sampling:** The problem with random sampling methods when we have to sample a population that's disbursed across a wide region is that you will have to cover a lot of field in order to get to each of the units you sampled. It is for precisely this problem that **cluster or area random sampling** was invented.

  In cluster sampling, we follow these steps:

  - Divide population into clusters
  - Randomly sample clusters
  - Measure all units within sampled clusters
- **Sampling Techniques**

Multi-Disciplinary Approach: People with different skills, experience and viewpoints will look for different views, perspectives and analysis of a given topic, and the team as a whole will obtain new and deeper insights when these different perspectives are shared.

Flexibility and on-the-Spot Analysis: Plans and methods semi-structured, and discussed and modified as fieldwork proceeds. The team constantly reviews and analyses its findings to decide how to continue. As understanding

increases, emerging issues and unexpected findings come more clearly into focus, and plans, topics and methods can be revised.

TOOLS FOR DATA COLLECTION

Selection of Tools

AI Search

- Depth-first tree and graph search.
- Breadth-first tree and graph search.
- Uniform-cost tree and graph search.
- Best-first search.
- Bidirectional depth-first tree and graph search.
- Bidirectional breadth-first tree and graph search.
- AND/OR depth tree search.
- AND/OR breadth tree search.

DAI

A library for the Python programming language that provides an object oriented interface to the CLIPS expert system tool. It includes an interface to COOL (CLIPS Object Oriented Language) that allows:

- Investigate COOL classes
- Create and manipulate with COOL instances
- Manipulate with COOL message-handler's
- Manipulate with Modules

JACK

JACK is a new library providing constraint programming and search for Java.

- JACK consists of three components:
- **JCHR:** Java Constraint Handling Rules. A high-level language to write constraint solvers.
- **JASE:** Java Abstract Search Engine. A generic search engine for JCHR to solve constraint problems.
- **Visual CHR:** An interactive tool to visualize JCHR computations.

CLIPS

CLIPS is a productive development and delivery expert system tool which provides a complete environment for the construction of rule and/or object based expert systems.

CLIPS provides a cohesive tool for handling a wide variety of knowledge with support for three different

programming paradigms: rule-based, object-oriented and procedural. Rule-based programming allows knowledge to be represented as heuristics, or "rules of thumb," which specify a set of actions to be performed for a given situation. Object-oriented programming allows complex systems to be modeled as modular components (which can be easily reused to model other systems or to create new components). The procedural programming capabilities provided by CLIPS are similar to capabilities found in languages such as C, Pascal, Ada, and LISP.

Bayesian Spam, Allow/Block, Auto-Delete, Bounce, Report and Punish, Review, Fraudulent link detection, Challenge Emails, Statistics, User Friendly Interface, Email Details, Black Lists, Analyze Links for Spam Content, Fully customizable

METHODS FOR DATA ANALYSIS

Data Mining

Data mining is the process of extracting nontrivial and potentially useful information, or knowledge, from the enormous data sets available in experimental sciences (historical records, reanalysis, GCM simulations, etc.), providing explicit information that has a readable form and can be used to solve diagnosis, classification or forecasting problems. Traditionally, these problems were solved by direct hands-on data analysis using standard statistical methods, but the increasing volume of data has motivated the study of automatic data analysis using more complex and sophisticated tools which can operate directly from data. Thus, data mining identifies trends within data that go beyond simple analysis. Modern data mining techniques (association rules, decision trees, Gaussian mixture models, regression algorithms, neural networks, support vector machines, Bayesian networks, etc.) are used in many domains to solve association, classification, segmentation, diagnosis and prediction problems.

Among the different data mining algorithms, probabilistic graphical models (in particular Bayesian networks) is a sound and powerful methodology grounded on probability and statistics, which allows building tractable joint probabilistic models that represents the relevant dependencies among a set of variables (hundreds of variables in real-life applications).

The resulting models allow for efficient probabilistic inference. For example, a Bayesian network could represent the probabilistic relationships between large-scale synoptic fields and local observation records, providing a new methodology for probabilistic downscaling: i.e. allowing to compute P (observation large-scale prediction). For instance, the red dots in the figure below correspond to the grid nodes of a GCM, whereas the blue dots correspond to a network of stations with historical records (the links show the relevant dependencies, automatically discovered from data).

General Research Time- Table

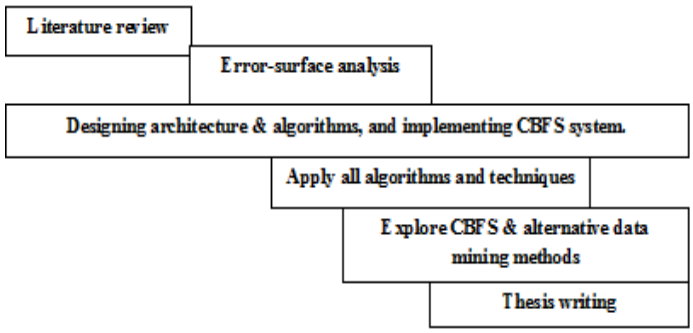

Figure 2

CONCLUSIONS

According to the Cyberbullying Research, "there have been several high profile cases involving teenagers taking their own lives in part because of being harassed and mistreated over the Internet, a phenomenon we have termed cyberbullicide – suicide indirectly or directly influenced by experiences with online aggression."

Cyberbullying is an intense form of psychological abuse, whose victims are more than twice as likely to suffer from mental disorders compared to traditional bullying. The reluctance youth have in telling an authority figure about instances of cyberbullying has led to fatal outcomes.

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