Chapter 1

Introduction

In this chapter, we briefly outlined our project ideas and results, and what is our motivation behind this.

1.1 Project Overview

Facebook is the most popular social media in Bangladesh. We can see celebrities, public figures, and even the general public being targeted on Facebook as cyberbullying victims. Cyberbullying is a particular form of bullying that uses digital technology. It happens on social media, messaging and gaming platforms, and cell phones. It is repetitive actions intended to fear, rage, or shame targets. The language is often obscene, body-shaming, or insulting to the victim. When a celebrity or public figure uploads a photo or posts on Facebook, many people cyberbully them. These comments are hurtful and offensive to the victim. If there were a system to flag comments for removal, it would not be inconvenient for social media users to use. So, we want to build a cyberbullying detection system, which will help reduce the effects caused by cyberbullying.

1.2 Motivation

In modern times, Artificial Intelligence(AI) and Machine Learning(ML) are applied to the supervision of tasks that do not require human effort. They need less time and work with great accuracy if trained well. The dynamics and endless possibilities of Machine Learning motivated us to solve this socio-psychological problem using this technology. The prevention of cyberbullying comments can help users use social media without disturbance. Victims of cyberbullying suffer psychologically as well. We can not prevent cyberbullies from using social media, but we can prevent them from posting cyberbullying comments or remove their cyberbullying comments using technology. This will create a user-friendly, non-harmful social media platform.

1.3 Objectives

By working on this project, we will have gained extensive knowledge about cyberbullying and its impacts. We expect to build a working Machine Learning model with over 80% accuracy by the end of our Final Year Design Project and develop a web application with a well-designed UI. We plan to publish a research paper based on research works we will have done in this project.

1.4 Methodology

We can build a cyberbullying detection system with the help of Machine Learning. At first, we have to make the dataset, which we will use to train our ML model. We can make the dataset by collecting Facebook comments used to cyberbully someone. We can quickly get those types of comments from any celebrity or public figure's page on Facebook. There is a tool publicly available called Facepager to get any data from Facebook(via API). We have already used and tested this tool to collect Facebook pages' comments. We can use this tool to get those comments as JSONs. We will then need to manually(for maximum accuracy) choose, sort, and label those comments to make our dataset. We will have to use Natural Language Processing to train our ML model to flag these comments. If we can build the model with great accuracy, it can be used on social media or any platform. We will have to face many exceptions as we will have to consider Bangla texts and Bangla texts written using the English alphabet. Also, we will have to consider the cases of any spelling mistakes. We should be required to study thoroughly about cyberbullying and its impacts.

1.5 Project Outcome

The aim of this project is to develop a system capable of detecting cyberbullying with maximum possible precision. When the ML model has reached optimum accuracy, it can be easily integrated with any platform that enables users to comment. Then those platforms will be able to flag cyberbullying comments automatically once those are added. It is also possible to easily implement this system to any site by using a browser extension that conceals such comments. As a working prototype, we will develop a web application to detect cyberbullying from written text.

1.6 Organization of the Report

Here put a chapter wise structure of the report in narrative form.