With how fast today’s technology progresses and language evolves it’s hard for anyone to keep up, let alone parents trying to understand the activities their children are engaged in. With mental health in children becoming more and more of a prominent issue, quite often we’re missing the signs that could not only prevent adverse mental health issues but also teen suicide. With this in mind we want to create an application that monitors the things occurring on a child’s computer and detects warning signs and dangerous behaviours

The primary function of the application is to cache information and compare it against a database of predetermined warning signs. The secondary function would be a chatbot that activates when certain parameters were met. Machine Learning would be used to help craft algorithms for both parts of the system to fine tune an understanding of the risk factors. The information collected from each computer that has this application installed would be used to further evolve the algorithms or notice changing trends including slang and new websites that become more frequented when a decline in behaviour begins.

This application would be designed with child psychologists involved at the start to help determine and understand common language and behaviour amongst children at risk or engaging in dangerous online behaviour. Using a combination of a Naive Bayes algorithm and a Support Vector Machine, the information obtained from the professionals, browsing history of at risk children and any other reputable source would be filtered to create a set of values that would activate part two of the application.

Should the parameters for intervention be met, the chat bot, that is the second part of this application would be designed to check on the child by asking a series of questions that wouldn’t be simple yes or no questions. I.e.” What did you do today?”or “Who is your best friend?” These questions would be designed by the child psychologists once again and would aim at having the child open up to them. The chatbot would more than likely run on the Microsoft Azure platform as it seems to be customisable enough to handle such a complex chatbot. Once the child has finished the bot interaction the bot would once again cross reference with a secondary system looking for a trend and from there it would decide the most appropriate course of action.

The courses of action range from making a note to check back with the child about an event, checking in a second time in a few days or where the bot identifies it necessary it may offer to connect the child to external help. Should the app meet a highly stringent set of values it may email the parents with a report that they need to follow up. This application is set up to do a mental health triage and decide the best course of action. It will take a large amount of data to get it’s values right, however even if it sheds some light on how the behaviours start, it may go a long way to improving the understanding of when the issues actually begin.

Some potential drawbacks are definitely making a child interact with a bot and feeling like that bot is impartial. There is also a privacy aspect, children are the specific target of this app as they are the ones at risk and also their parents have legal guardianship. The application is unsuitable to be installed on a person over the age of 18s computer as there are some problematic issues around privacy laws. It would have to be voluntarily installed and a user agreement accepted. The user agreement will have to be written to let parents know that this is not a fix for online behaviours but a tool for helping them to monitor their child. We would not be advertising this application as a one stop shop for policing their child.

This application wouldn’t solve all of the current issues facing children and their online behaviour, although we would hope we’re able to put a severe dent in it using Machine Learning and some guidance from professionals.