*****Department of Computer Science and Engineering  
Seoul National University***

**Course: Advanced Mobile Computing   
(SNU CSE M1522.002600\_001)**

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**Project in the field of mobile and ubiquitous computing systems**

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**Subject of the project: Automated bullying reporting system**

This project deals mainly with the social issue of bullying which constitutes a topic that should not be neglected and also represents a pervasive severe issue all around the world. The students (victims) concerned can encounter long-term social problems (the students are at higher risks of having behavioral and emotional problems) and can perform poorly at school due to the impact of bullying. It is difficult for the teachers to grasp every kind of bullying situations, especially the ones that happen outside of the school (e. g. going to and returning from school/academies). Even within the school facility (e. g. school corridor and the sports field) it is difficult for a teacher to have full control of all the incidents that might happen. Even though, the teacher is present at the same place (e. g. classroom) as the victimized student, it is not always guaranteed that he can prevent all situations that can also represent a dangerous situation for the class, since the inner physical processes are mostly invisible for the surrounding. Additionally, both the students (victims) and classmates (witnesses) have difficulties to speak about the incidents due to the consequences.

That’s why, the proposed system should give assistance to the schools, mentors, and parents to address and prevent bullying situations effectively already at an early stage. The system should improve the process of identifying bullying situations by automizing the detection process. And if the system is automated enough, early tendencies of bullying can be detected at an early stage and support can be given to the teachers to react faster. Thereby, we have determined the increased heartbeat as the main identifier and in order to make the bullying situation clearly distinguishable, we also consider further signals, such as sound, location, time, and hand movements.

**Study participants and prerequisites for participation:**

To validate the efficiency and the usefulness of our system, it should be tested within different classes (at least 2) of different schools, elaborated, and thoroughly evaluated.

The classes should consist of student(s) that are excluded from the classmates. These students may be picked on by other classmates or may encounter bullying situations. Classes from primary, middle, and high schools are considered.

**Study procedure:**

* Short briefing and clarification of our subject and objective of the user study
* Explanation of use (provided apple smartwatch and the user interface for the teachers, mentors, and parents)
* Conduct of study (Wearing the smartwatch for 1 day & sending signals to teachers, mentors, and parents (receiver side)) 🡪 In case of questions, please do not hesitate to ask the experimenter during the study

Filling out the questionnaire

* Evaluation of system 🡪 Usage of smartwatch for sending signals & displaying the signals to the receiver side whether conform with the desire and objectives of the users (students & receiver side)
* Debriefing

**Duration of study:**

The study takes approximately 1 day.

**Termination of study:**

The study participation is voluntary and can be cancelled at any time during the study without giving any reasons.

**Benefits for the participants through study participation:**

The proposed approach has the potential to detect bullying situations already at an early stage without being dependent of other classmates to report the bullying incident. So, the schools can counteract the issue better and react faster and actively towards the problem. The participants would help to actively combat the social issue of bullying.

**Disadvantages for the participants through non-participation:**

Since the study participation is voluntary, there are no disadvantages for the students, if they do not participate in the study.

**Compensation of participants:**

The students are remunerated with sweets and vouchers for participating in our study.

**Further questions:**

If there are further questions, you can send an e-mail to the project members.

**Confidentiality in dealing with personal data:**

In this project the students from Seoul National University are instructed to document and record the data of the target group during the whole project. This project requires a responsible and sensitive handling with data. Both data access through and forwarding the user data to unauthorized third parties is not permitted. The gathered data are solely utilized for the project mentioned above in the context of the university for research purposes.

Jaeyoung Kim, Seokwon Choi, Dereje Regassa, and Thanh Dung Ho (project members)

**Declaration of consent:**

The responsible project member(s) ( ) have informed me fully about the intention, meaning, and the scope of the project. I have read the information and have fully comprehended it. I have obtained the opportunity to ask questions, I have understood the given answers, and at the moment I do not have any further questions. I have been informed about the possible usage and the consequences of the project. I have received sufficient time to decide to participate in this project and I clearly know that the participation is voluntary. I know completely that I can withdraw my consent at any time without giving any reasons and this withdrawal will not affect me negatively. I agree that during this project my data will be recorded. I am aware that my data will be stored in an anonymous way and is used solely for research purposes. I have got copy of the information and have obtained the declaration of consent. With this I declare my voluntary study participation in this project.

Date Study participant

Date Project member

Date Project member

Date Project member

Date Project member

Date Professor

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