**Feasibility report**

**Background**

With the maturity of search technologies and the rapid development of artificial intelligence nowadays, biometric identification technology is gradually showing its high commercial value and market prospect. The perfection and popularization of hardware have paved the way for the development of intelligent software, and the superiority of AI technology has gradually emerged in various fields.

**Project Description**

This project, whose functions are customized by the team, focuses on the usage of software engineering methods since it is the coursework project of Software Engineering from MAC program. After several team meetings, overall consideration and comprehensive trade-off, the project is defined as **a student selection system with authentication login through facial recognition using the webcam**.

**Brief Requirement Analysis**

A training institution wants to order and develop a course selection system which helps students select courses and manage records. Meanwhile, facial recognition in a biometric way is required to authenticate students’ and teachers’ login. This system is required to be back-end manageable; system administrators can configure several key settings; teachers can use the system to call the roll; students can log in, access classes, manage personal information and query test results through facial recognition and authentication. The duration of the project which is accessible on both mobile phones and web pages is two months.

**Business Analysis**

Facial recognition can be applied in all walks of life, and the development of AI is not limited to facial recognition. At the same time, it holds considerable potential business value in biometric identification and is estimated to be applied more in the business models to do relatively complex computer operations.

**Technical Feasibility Analysis**

1. For the project’s scalability, it is designed to be based on JSP(JavaServer Pages) which uses Java as the programming language.
2. For the project’s stability and integrity, it is designed to be based on Strus2 framework to basically build B/S servers, in which case key technologies including Servlet and AJAX are used.
3. The project is required to directly gain the data stream of the web camera from web client side, in which case key technologies including HTML5 and AJAX are used to gain data.
4. The server is required to process bio-data and identify users, in which case OpenCV3.2 class libraries are called to implement facial recognition and image comparing.
5. For the programming environment’s consistency and compatibility, IntelliJ-IDEA from JetBrains is used as IDE for all developers.
6. Hibernate is used as a tool for persistently object-relational storage and query, with AJAX completing front-end and back-end fast interaction of data.
7. This project is coursework project of Software Engineering, in which case MySQL database is used to both improve portability and reduce the complexity of database environment configuration.

**Software Engineering Analysis**

1. The ultimate goal of this academic project is not completely certain because although requirements are clear, detail is likely to be changed.
2. The duration of the project is short, which requires developers to complete all function design, implementation and testing within two months.
3. High requirements of implementation are that functions are designed to be relatively independent.
4. The priority of each module is specific in the architecture.

5. Five programmers consist of the team

In conclusion, the project is required to be implemented in a fast and flexible way, so Extreme Programming is adopted for completing implementation and interaction of all phases.