A Face-Recognition Attendance Prototype for Students

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***Abstract*—This undergraduate thesis investigates a student attendance system using face recognition. Class attendance recording can be automated if student identities and session records are handled reliably. The student implements face detection and recognition with a web interface and SQL-based attendance records. The thesis shows attendance queries by date, student number, and course section, together with Excel and CSV export. The conclusion reports a working student demonstration and identifies recognition with glasses as a condition needing improvement. A larger and more varied dataset, mobile access, and a Raspberry Pi version are future proposals. The report does not establish field accuracy across diverse classrooms, consent or privacy safeguards, or reliability for real institutional attendance decisions. The contribution is a documented student study or prototype whose stated scope can guide further testing.**

***Index Terms*—face recognition, attendance, web system, biometrics**

I. Introduction

Class attendance recording can be automated if student identities and session records are handled reliably. This thesis investigates a student attendance system using face recognition. It begins from a practical engineering need and explains the technologies and workflow chosen for the case. The objective is to document a student implementation or comparative investigation, together with the evidence available in the manuscript. Broader operational or economic effects require separate measurements and are not assumed from the existence of a prototype [1]. Earlier ICTU student work on related designs is included here for context [2], [3]. Related published studies provide context for the subject and methods [4], [5], [6], [7], [8], [9], [10]. These contextual works were selected for this English summary; they are not asserted to appear in the original thesis bibliography.

II. Methods

The student implements face detection and recognition with a web interface and SQL-based attendance records. The thesis shows attendance queries by date, student number, and course section, together with Excel and CSV export. The source is summarized through its stated design, implementation material, examples, and conclusion. Features shown in the manuscript are distinguished from proposals for later development. This review does not add a new experiment, fill missing measurements with estimates, or treat a planned capability as an observed result. The source thesis remains the provenance for the reported work [1].

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III. Results

The conclusion reports a working student demonstration and identifies recognition with glasses as a condition needing improvement. A larger and more varied dataset, mobile access, and a Raspberry Pi version are future proposals. The report's screens, configurations, examples, or measurements constitute the evidence for this summary. A capability described only as a design intention is not counted as a validated operational outcome. No additional performance, adoption, financial, or safety figure has been introduced here. The result is interpreted within the scope of the student's documented setup [1].

IV. Discussion

The report does not establish field accuracy across diverse classrooms, consent or privacy safeguards, or reliability for real institutional attendance decisions. Further work could evaluate error rates under varied lighting and eyewear and review data protection before any operational use. These limitations affect how the evidence should be read. The current manuscript can support understanding of the design and reported demonstration, while independent tests would be needed for stronger claims. Any later deployment should document its environment and separate observed outcomes from intended benefits [1].

V. Conclusion

The thesis documents a student attendance system using face recognition. The conclusion reports a working student demonstration and identifies recognition with glasses as a condition needing improvement. A larger and more varied dataset, mobile access, and a Raspberry Pi version are future proposals. The report does not establish field accuracy across diverse classrooms, consent or privacy safeguards, or reliability for real institutional attendance decisions. Further work could evaluate error rates under varied lighting and eyewear and review data protection before any operational use. Accordingly, the present contribution is a source-grounded account of the student work and its tested or illustrated scope. Claims about broader effectiveness should be assessed in later work using explicit evaluation conditions [1].

References

[1] Trần Nguyên Dũng, ”A Face-Recognition Attendance Prototype for Students,” internal undergraduate thesis (original in Vietnamese), Thai Nguyen University of Information and Communication Technology, 2024.

[2] ICTU Student 209, ”Cryptographic and Automatic Attendance System Using RFID Cards and PSoC Technology,” internal undergraduate thesis, Thai Nguyen University of Information and Communication Technology, 2010.

[3] Nguyễn Minh Tuấn, ”Construction of a Face Recognition Program for Family Robots,” internal undergraduate thesis, Thai Nguyen University of Information and Communication Technology, 2021.

[4] Mustafa M. et al., ”Face Recognition System for Students’ Attendance Register,” International Journal of Computer Applications, 2019. doi:10.5120/ijca2019919487.

[5] Er. Farzana Khan et al., ”Face Recognition Based Attendance System,” International Journal of Advanced Research in Science, Communication and Technology, 2023. doi:10.48175/ijarsct-9225.

[6] Dr. S Dhanasekaran et al., ”AN INTELLIGENT AUTOMATIC ATTENDANCE MANAGEMENT SYSTEM FOR STUDENTS USING FACE RECOGNITION,” International Journal of Engineering Applied Sciences and Technology, 2020. doi:10.33564/ijeast.2020.v05i02.097.

[7] Chinnadura. S et al., ”Face Recognition Based Student Attendance System,” International Journal of Advanced Research in Science, Communication and Technology, 2023. doi:10.48175/ijarsct-9716.

[8] Niharika Mahajan, ”Student Attendance System via Face Recognition,” International Journal for Research in Applied Science and Engineering Technology, 2022. doi:10.22214/ijraset.2022.43153.

[9] Omar Alniemi et al., ”Class Attendance System Based on Face Recognition,” Revue d’Intelligence Artificielle, 2023. doi:10.18280/ria.370517.

[10] Prachi Goel et al., ”Face Recognition Attendance System,” International Journal of Computer Sciences and Engineering, 2023. doi:10.26438/ijcse/v11i12.5355.