

Investigating Effectiveness of AI for Estimating Learner Engagement Level

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School/Institute: [Computing and Digital Technologies](#)

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Project summary

The education sector has been witnessing a rapid change in its teaching approach for past decade with the introduction of digital technologies. Its integration within this sector now seems to have the potential in enhancing classroom management. Maintaining learner engagement in any teaching or learning based environment like physical classroom or virtual classroom is always a challenge for every instructor. They are often in search of different tools and methods to boost as well as retain learner engagement. Moreover, student engagement is essential for achieving student satisfaction and lower student withdrawal. Artificial Intelligence (AI) capabilities in understanding human's voice, estimating emotion; reading facial expressions and hand gestures; and analysing body movements are well known today. Therefore, this work aims to:

- a) Investigate the effectiveness of AI in estimating learner engagement level by leveraging its capabilities of analysing verbal and/or non-verbal cues.
- b) Explore whether usage of AI based methods can be leveraged to make personalised learning experience for individual learners.
- c) Investigate ethical challenges surrounding such approach when used in real environment.

Experiments shall be conducted on suitable publicly available datasets to establish the feasibility of the proposed concept. Currently the proposed research project is a standalone work with a potential to be expanded into a bigger research project based on the initial findings.

By working on this project, the intern will have the chance to enhance their understanding of various AI domains while exploring potential career opportunities. Intern shall have the opportunity to develop technical, analytical and research skills in:

- a) feature engineering
- b) training & optimising machine learning models
- c) computer vision tools like OpenCV, MediaPipe, DLib, DeepFace etc.
- d) action recognition models

Specific skills and experience required for this project

Please also refer to the advert on our jobs pages for the person specification for these internships

The applicants require strong academic background, must be working towards/have BSc. Degree (or equivalent) in Computer Science with AI & Machine Learning (ML). Skills and experience required for this project:

- a) Python Programming Skill (Intermediate level)
- b) Object Oriented Programming Concepts (Intermediate level)
- c) Machine Learning (Beginner level)
- d) Neural Networks (Beginner level)
- e) Strong interest in AI/ML and Computer Vision (CV) technologies and their application in real world.
- f) Critical thinking, problem solving and time management skills
- g) Must be able to travel to the SHU City Campus

Project location

City Campus (Hybrid delivery may be possible)

Project delivery

This project is available on a full-time basis