Deep Learning

Researchers at University of Tübingen and Leibniz Institute für Wissensmedien in Germany, as well as University of Colorado Boulder, have recently investigated the potential of machine-learning techniques for assessing student engagement in the context of classroom research. More specifically, they devised a deep-neural-network-based architecture that can estimate student engagement by analyzing [video footage](https://techxplore.com/tags/video+footage/) collected in classroom environments.

"We used camera data collected during lessons to teach a deep-neural-network-based model to predict student engagement levels," Enkelejda Kasneci the leading HCI researcher in the multidisciplinary team that carried out the study, told TechXplore. "We trained our model on ground-truth data (e.g., expert ratings of students' level of engagement based on the videos recorded in the classroom). After this training, the model was able to predict, for instance, whether data obtained from a particular student at a particular point in time indicates high or low levels of engagement."

The model devised by Kasneci and her colleagues can scan large datasets of videos shot in classroom environments and identify instances where student engagement was either high or low. According to Peter Gerjets, the leading cognitive psychologist in the team, such a method could help to identify classroom instruction strategies that are associated with high student attention and could also be used in teacher training programs.