Philia: Fire up your learning inspiration with AI

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The time for integrating emotion into e-learning with the help of AI has come. Based on anonymous real-time speech recognition in any e-learning setting, emotion AI will integrate, support and inspire students through personalized recommendations and supportive communication.

Team: The Philias

Team members

Belen Prado, Shivani Mehar, Huahua Tian, Sirine Abid

Members roles and background

Belen Prado: Scholarship (DAAD) for doctoral research in philosophical aspects of Machine Learning and Lecturer of History and Epistemology of Machine Learning at Leuphana Universität Lüneburg, Germany, postgraduate and undergraduate in Political Philosophy (University of Buenos Aires- UBA). Programming with a specialization in JAVA (National Technological University- UTN).

Shivani Mehar: Government College of Engineering and Research Avasari, Pune (SPPU University) TE Electronics and Telecommunication engineering

Huahua Tian: UI/UX Designer. Currently a double master degree student with Human-computer Interaction and Design at Aalto university and KTH Royal Institute of Technology. Minor in Innovation & Entrepreneurship at EIT Digital master school.

Sirine Abid: Designing, programming. Second year Business Intelligence student at the Higher Institute of Industrial Management of Sfax, University of Sfax.

Solution Details

Solution description

The present scenario has radically changed interactions causing major impacts on students' emotional mindset and thus, on their learning performance. In a fully online environment, emotions are missing. Philia: Fire up your learning inspiration with AI offers a solution to it. By means of anonymous individual ID number students can optionally log in to an integrated dashboard from their educational platforms and interact with their AI assistant who detects their emotional-state via speech-recognition. This simple tool implements affective computing: artificial emotional intelligence for real-time detection and offers, to the detected emotion, an empathic conversation towards personalized recommendations (podcast, lectures, videos, external links) whether to motivate and inspire them or to reinforce positive outcomes. Unlike old educational testing services which ask for students' feedback via email-exchange after courses, Philia provides a higher accuracy since as experts pointed out: "voice is the safest as well as most accurate for emotion AI analysis" (Gurjal, 2019). This AI tool is a beneficial solution for students as well as for teachers/researchers, while contemplating students' emotions safely and unobtrusively and guiding and encouraging their online learning experience it also offers dynamic feedback to teachers and pilot research after courses.

Solution context

This solution, implementable in any e-learning setting, can be used by students by following three simple steps: I) students shall select most prefered digital tools with a correspondent use-frequency II) Once options have run a pop-up window "Are you still holding up okay?" will be displayed upon a button option for the analysis of speech signal by means of affective computing for analyzing the speaker's emotional state. III) Providing this database to the system will allow the AI system to lead to recommendations (podcast, lectures, videos, external links) whether to overcome the present state or to reinforce the positive outcomes.

The high performance of humans for subjective interpretation of emotions can also fail at understanding them. Based on data provided by the real-time speech signal, machine learning indicators are able to extract the features of these signals, classify them and turn them into a rich variety of emotional metrics irrespective of the semantic contents. Using different testing procedures, scientific results show: in 2015 an overall accuracy of 67 % by using FILTWAM's vocal emotion recognition software artefact (Bahreini, K. et al.) and in 2020 an average accuracy of 82% when trained on the Berlin Emotional Speech (EMO-DB) data (Lech, M. et al). The biggest emotion engine company, Behavioral Signals, offers robust datasets of emotion recognition able to be integrated to own software solutions for social good. We truly believe that the good use of AI to help dealing with the emotional-states in this complex scenario caused by COVID-19 is a way to achieve efficiency and inspiration for learning.

Solution target group

The target group of this affective e-learning setting are any students from a large variety of learning

environments using online platforms such as Universities, colleges of art and music, various professional schools, teacher-training, institutes of technology and High School.

Solution impact

The impact is to contemplate the students' cognitive emotions while using digital learning tools in order to support and encourage them within the online environment. Greatly beneficial impacts are triggered in various different areas: i) it provides empathy, respect, a feeling-focus environment with non-judgment which makes this AI-assistant more attractive and helpful to them ii) it supports AI ethic privacy principles by following a restricted and protected data approach via anonymous individual ID number, iii) it promotes a motivating e-learning culture in the pandemic scenario iv) it offers a dynamic feedback to teachers and pilot research after courses.

Solution tweet text

Don't feel like online classes today? speak with #Philia study smarter not harder

Solution innovativeness

This is the first integrated and unified board with AI assistance to help students to move forward not by considering AI merely as an efficient-tool but as an "empathic mean" for continuing expanding motivation and inspiration.

Solution transferability

All institutional educational online platforms want to strengthen their learning strategies for better access and use of digital tools, Philia can be integrated to any of their learning environments. Other than an empathic conversation and recommender system this technology is a key to reinforce the interactivity within the platforms and -by the collected data gained via emotion-detection- it offers a valuable insight to the educational institutions about the students' engagement in relation to digital tools which can also be transferred when making strategic decisions for education.

The insights and decision-making (which takes into account students' emotions on education) paves the way for extending analysis to future and diverse research areas while serving as proof of institutional progress via this type of technology. For environments where higher education is considered, such as: universities, colleges of art and music, various professional schools, teacher-training, institutes of technology and High-School the implementation of this type of technology is certainly useful, helpful and extends the horizons of understanding about the human use of technology. Its use in environments such as elementary school might still be regarded as imprecise given the complexity involved in the early stages of education.

Solution sustainability

Philia aims to support the students during their online learning experience, simulate empathy and offer personalized recommendations to keep the students motivated and inspired. In the short-medium term, Philia provides the necessary and basic support to students and allows the members of the educational community a general overview from anonymous students' data to decide if adjustments are needed, all in all these considerations imply a combined supportive environment. In the long term, this will harmonize the online education systems with students by increasing the

acquired data. In this near future, abundant data can help to construct a comprehensive online study evaluation system. Insights on the detection of emotional aspects throughout the learning process limited by the necessary regulatory and ethical frameworks enable to fuel a sustainable development for AI in education.

Solution team work

Members of this team took what is fundamentally at stake for the future of AI in digital learning environments, that is: contemplating and supporting students' emotional state with the help of AI. It has been more than a rewarding experience to join our passion and skills as a female team from different cultural and educational backgrounds and work on ideas that could define and enhance the e-learning experience.