

Feladó: Transactions on Education
<onbehalf+reisslein+asu.edu@manuscriptcentral.com>
Küldve: péntek 2016. december 2 13:25
Címzett: Katona József
Tárgy: Request to Serve as a Manuscript Reviewer for the IEEE Transactions on Education

Dear Mr. Jozsef Katona:

this manuscript appears related to your just published IEEE TE article on A Brain–Computer Interface Project Applied in Computer Engineering. I would therefore greatly appreciate your review comments.

Thank you very much,

Martin

The manuscript entitled "EEG Activities and Eye Movements during Program Comprehension: An Exploration on Cognition", Manuscript Number TE-2016-000292, has been submitted to the IEEE Transactions on Education. Given your expertise in this area, I would greatly appreciate your serving as a reviewer on this manuscript. If you do agree, your review would be due three weeks from your accepting this invitation. The manuscript's abstract is at the bottom of this email.

If you are willing to serve as a reviewer on this manuscript, please:

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In both cases you will be sent an e-mail which will provide you with access to the manuscript. The ScholarOne system will create an automatic electronic log of your assignment and automatically update the database on the status of the review.

Our primary objective is to obtain a high quality, fair review of the manuscript. If you are unable to perform the review, it would be extremely helpful if you would suggest a colleague that could review the manuscript. (I will need both the name and E-Mail address of the colleague.)

If you accept the responsibility of reviewing this manuscript, once I have notified you that you have been officially assigned to be a reviewer of the manuscript, you will be able to access the manuscript through the Transactions on Education Web site, <https://mc.manuscriptcentral.com/te-ieee> using your user id of katonaj@uniduna.hu and your password, that you can access by clicking https://mc.manuscriptcentral.com/te-ieee?URL_MASK=7fb6b2bfd31a4876b12852457777bac. If you have any problems with either one please contact Dr Kirsty Mills at Dr.Kirsty.Mills@ieee.org

Again, the abstract follows below. Thank you in advance for your taking the time to consider this request.

Sincerely,
Martin Reisslein

This study attempts to explore cognition during program comprehension through physiological evidence, by recording and comparing the EEG activities in different frequency bands and eye movements of participants with high and low programming abilities. An experiment was conducted with 33 participating students from the Department of Information Engineering. We recorded their EEG activities when they were reading two programming problems. At the same time, participants' eye movements were recorded by eye-trackers, so as to further understand the relationship between the written programs and EEG activities. Experiment results show that high-performers displayed higher intensity on theta waves, lower alpha waves, upper alpha waves and beta waves, when comprehending programs with complicated functions and structures, such as recursion, nested for-loops. In other words, high-performers were more successful in encoding new information for tracing execution such as variables and arrays into their working memory during the process of program comprehension. In addition, high-performers demonstrated a better memory and attention during program comprehension, and were able to extract program-related knowledge from their long-term memory more quickly. Results of this study not only offer the corresponding evidence to the cognition in program comprehension, but also provide educators with references for designing suitable pedagogical strategies.

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