# How Green is Your Software?

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Professor Csaba Szabó will give the invited talk about one specific part of green software engineering. He is currently involved in research in the field of green software engineering, behavioral description of software, information systems and web services, software and test evolution, and testing and evaluation of software.

*Short description:*
Like with Bio products, the world is developing to become a more nature-aware ecosystem. The green initiative defines two main goals: reduce energy consumption and use basic natural sources in electrical energy production. Being a "different kind of" business would not excuse software engineering and industry for taking no action. This talk focuses on measuring and improvement of energy consumption of software and its development processes, where each development phase plays a significant role. Considering any software development process, the energy is being consumed while problem analysis, constructing and evaluating the code and deploying the solution as well. Specific software or hardware tools have to be used to implement energy consumption monitoring for software run as part of and/or at the top of selected operating systems and for evaluation of the measured energy consumption. Usual usage scenarios are to monitor energy usage of selected software, which one is called energy profiling. We will also look at the possibility to use these tools to measure how green is the process that produces or evolves these programs.
Energy profiling is only a part of green software engineering as the goal should not be to measure without trying to improve the quality of the system. During the talk, there will be also selected improvement techniques discussed.

**More about Csaba Szabó:**
Csaba Szabó is an Associate Professor at the Department of Computers and Informatics of the Faculty of Electrical Engineering and Informatics (FEEaI) at Technical University of Kosice. He graduated (MSc) with distinction at the Dept. of Computers and Informatics of the Faculty of Electrical Engineering and Informatics (FEEaI) at Technical University of Kosice in 2003. He obtained his PhD in Program and Information Systems at the FEEaI at Technical University of Kosice in 2007. Since 2006 he is affiliated with the Dept. of Computers and Informatics, FEEaI, Technical University of Kosice. Currently he is involved in research in the field of green software engineering, behavioral description of software, information systems and web services, software and test evolution, and testing and evaluation of software. He is a member of the John von Neumann Computer Society (NJSZT, Hungary) and the Slovak Society for Applied Cybernetics and Informatics (SSAKI). Currently he is also leading the ERASMUS+ KA203 - Strategic partnership for higher education project No. 2017-1-SK01-KA203-035402: "Focusing Education on Composability, Comprehensibility and Correctness of Working Software".