

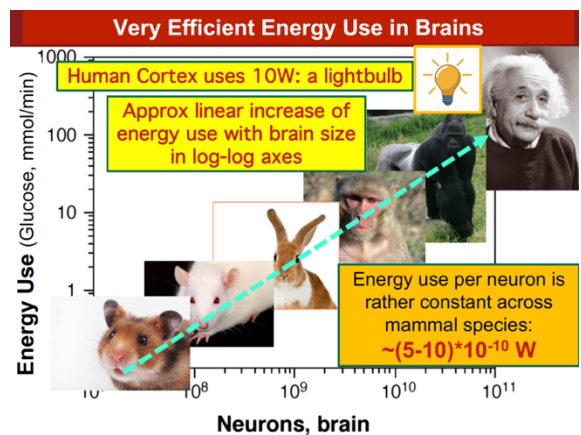
**SMC Society Distinguished Lecturer Program Event:
DLP Talk and Visit by Robert Kozma at IEEE SMC Society Hungary Chapter
March 30-31, 2023**







After years of broad-range lockdowns due to the global pandemics, when essentially only virtual meetings could take place, finally real-life scientific exchanges can be organized. This has a positive effect on the SMC Society's Distinguished Lecturer Program, coordinated by Dr. Mariagrazia Dotoli, VP for Membership, SMC Society. The SMC DLP includes about a dozen leading scientists from various research areas covered by our Society. Dr. Robert Kozma serves as the SMC Society Distinguished Lecturer for 2022-2023, and he visited the SMCS Hungary Chapter and gave a DLP Talk on March 30, 2023 at Obuda University, Budapest, Hungary.

The IEEE Systems, Man and Cybernetics Chapter in Hungary is one of the highly successful Chapters of the Society and it has been established 20 years ago under the leadership of Dr Imre Rudas. The Chapter Chair at present is Professor Levente Kovacs, who is the Rector of Obuda University. The Chapter concentrates its activities on conferences and other meetings where people from the industry and academic discuss scientific, R+D, technical, and organizational affairs. The Chapter promotes participation of its members in main conferences organized and sponsored by the IEEE SMC Society.

Dr Kozma's SMCS DLP Talk took place on March 30, 2023, at Obuda University. It was attended by over 50 people, students, faculty, researchers, many of them members of the SMC Hungary Chapter. The talk took about an hour, including questions and discussions.

The title of Dr Kozma's talk was: "Sustainable Artificial Intelligence", which addressed today's hotly debated questions related to the explosive development of AI with strong impact on our daily life. Cutting-edge AI and Deep Learning technologies demonstrate outstanding performance in many important tasks requiring intelligent data processing under well-known conditions, supported by massive computational resources and big data. However, the performance of these systems may drastically deteriorate when the data are perturbed, or the environment dynamically changes, either due to natural effects or caused by manmade disturbances. A neuromorphic perspective provides crucial support under such conditions. Human brains are efficient devices using 20W power (just like a light bulb!), which is drastically less than the power consumption of today's supercomputers requiring MWs of power to solve specific learning tasks in an innovative way. Analyzing brain energy management helps developing computational and hardware implementations with drastic improvement in using resources, including energy, and provides a path towards sustainable AI.



IEEE SMCS		Hungary Chapter	
Computers	Brains		
			
			
High-precision hardware. High power consumption Millions of Watts (MW)	Messy wetware Low power needs A few Watts (W)		
 Sustainable AI	 Robert Kozma		

Dr. Kozma's talk started with an introductory overview of the activities of the IEEE SMC Society, with special emphasis on publications issues, including topics related to the IEEE Transactions of System, Man, and Cybernetics: Systems, in which Dr Kozma has a first-hand experience by serving as Editor-In-Chief of the Transactions. The main part of Dr Kozma's talk provided an overview of the challenges to intelligent systems, including crucial insights from brain studies, and introduced system designs combing the benefits of deep learning and neuromorphic technologies. He introduced several highly competitive solutions with applications to pattern recognition, and reinforcement Deep-Q Learning for interactive decision making and intelligent control. The talk followed by question and discussion segment and by a social gathering with members of the SMCS Hungary Chapter. On the day following the talk, Dr. Kozma visited the Antal Bejczy Center of Robotic Technology at Obuda University, where he met and discussed with researchers and students working at the Center.

Overall, Dr. Kozma's DLP talk and visit to SMC Hungary Chapter has been very useful in presenting a high-profile event at the Hungary Chapter and promoting the activities of our Society.

