Computational Astrocyence

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Abstract

Prevailing over a century, the neuronal paradigm of studying the brain has left us with limitations in both our understanding of how the brain processes information to achieve biological intelligence and how such knowledge can be translated into artificial intelligence. Overturning our assumptions of how the brain functions and dysfunctions, the recent exploration of astrocytes, the most abundant yet long-neglected non-neuronal brain cells, has ignited a revolution in our fundamental understanding of how information is processed, transferred and learned in the brain knot. In this talk, I will present the first fruits of our effort to harness and nurture the computational power of astrocytes and unleash it into brain-mimetic Robotics.

Bio

Konstantinos P. Michmizos is an Assistant Professor in the Department of Computer Science at Rutgers University and a Research Affiliate at the McGovern Institute for Brain Research, Massachusetts Institute of Technology. He received his B.S. degree in Computer Science and Engineering from the University of Patras, Greece, a M.S. Degree from McGill University, Canada and a Ph.D. degree from the National Technical University of Athens, Greece. Before joining Rutgers, he completed two postdoctoral trainings, at Massachusetts Institute of Technology on Neuro-Rehabilitation Robotics and Harvard Medical School on Neuro-Imaging. His research focuses on the computational principles of brain plasticity, from emulating it to serve people's life to targeting it to assist people's recovery.

Faculty Host: Thu Nguyen