

Semiconductors and Microelectronics Technology

Recent brain-data and theories suggest new ways of porting cognitive function into neuromorphic hardware through on-chip learning

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Time: 2:00pm – 3:30pm PT

Location: EEB 248

Abstract: I will discuss experimental data and models for BTSP (Behavioral Time Scale Synaptic Plasticity), the only known mechanism for 1-shot learning in the brain. I also will explain how BTSP can be used to create content-addressable memories and to learn cognitive maps that enable flexible goal-directed behavior. References and a simple model for BTSP have already been published (Yujie Wu and Wolfgang Maass, Nat. Comm. 2025). The other material is unpublished.



Biography: Wolfgang Maass - Since 2023: Director of the ELLIS Unit Graz (ELLIS = European Lab for Learning and Intelligent Systems). 1992-2017 Founder and Head of the Institut fuer Grundlagen der Informationsverarbeitung (Institute of Theoretical Computer Science) at Graz University of Technology. Since 1991 Professor of Computer Science at the Graz University of Technology in Austria (since 2017 without teaching duties except education of Phd students, leader of research projects). 1986 - 1991 Professor of Computer Science at the University of Illinois in Chicago. 1984 - 1986 Associate Professor of Computer Science at the University of Illinois in Chicago. 1975 - 1984 Postdoc at the Ludwig-Maximilians-Universität in Munich, the Massachusetts Institute of Technology (MIT), the University of Chicago, and the University of California at Berkeley.

Hosted by Prof. Jayakanth Ravichandran, Prof. J. Joshua Yang, Prof. Chongwu Zhou,
Prof. Stephen Cronin, and Prof. Wei Wu.
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