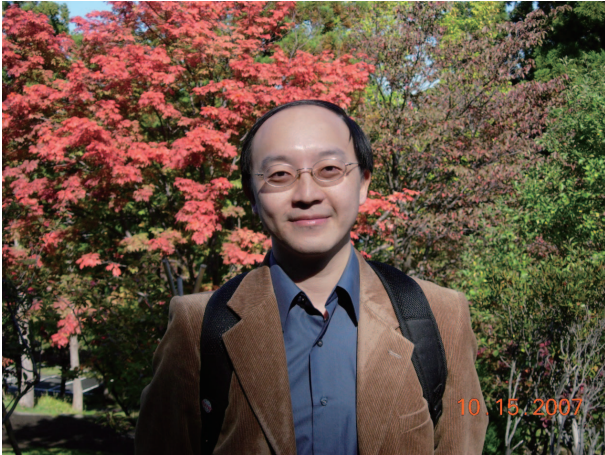


## Invited Talk III

13:40–14:30, Tuesday, March 30, 2021

**ERI in Taiwan: How We Develop EDA Solutions for Reconfigurable Memory-Centric AI Edge Applications**

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**Abstract**

US DARPA has rolled out Electronics Resurgence Initiative (ERI) in 2017, trying to open new innovation pathways in addressing impending engineering and economics changes that could challenge what has been a relentless half-century run of progress in microelectronics technology today. In order to imitate such efforts, Taiwan government has initiated Taiwan ERI program in 2019, there were total 5 projects running in EDA field. In this talk, those projects will be first briefed, and among which we will focus on one specific project working to build in-memory computing (IMC) design platform.

Memory-centric designs deploy computation to storage and enable efficient in-memory computation while avoiding massive amount of data movement. The in-memory-computing (IMC) schemes have shown distinct advantages and concerns when applying to different types of memory technologies. To attain an efficient design within short design cycle, it is essential to have an integrated design framework with automated tools to support hybrid memory systems, and perform effective optimization across design stages. The second part of the talk will then introduce a unified framework which integrates EDA solutions to address the design and optimization challenges at different aspects of next generation memory-centric designs, including fast reconfiguring in-memory/near-memory computing designs to provide optimized solutions (behavioral models and APR cell layouts), for AI edge applications.