



Advancement of Semiconductor Technology and Computing **Kiyoung Choi, Professor, Seoul National University**

These days, we are experiencing fast and salient paradigm shifts in computing accelerated by the advancement of semiconductor technology. They include cloud computing, internet of things, big data analytics, deep learning, and their combinations. And then edge computing is becoming a new buzzword. They are not just buzzwords but are actually being realized and affecting our lives significantly.

Most of them work on a huge amount of data and a large amount of computation, which have been enabled by the advancement of semiconductor technology. Conversely, the new computing paradigms have been the driving force for the development of semiconductor technologies for higher processor performance, larger memory capacity, and faster communications. Now, the challenges ahead of us are getting even higher performance at much higher efficiency, and they are actually providing compelling opportunities for the development of new semiconductor technologies.

In this talk, I will first look back brief history of computing and semiconductor technology. Then I will introduce some current researches in computing related with the new paradigms together with our own researches and future expectations.