Integrated Circuits and Systems Design
Department of Electrical and Computer Engineering
Seoul National University

Woo-Seok Choi

Education
2017.05 PhD ECE, University of Illinois at Urbana-Champaign
2010.08 MS EECS, Seoul National University
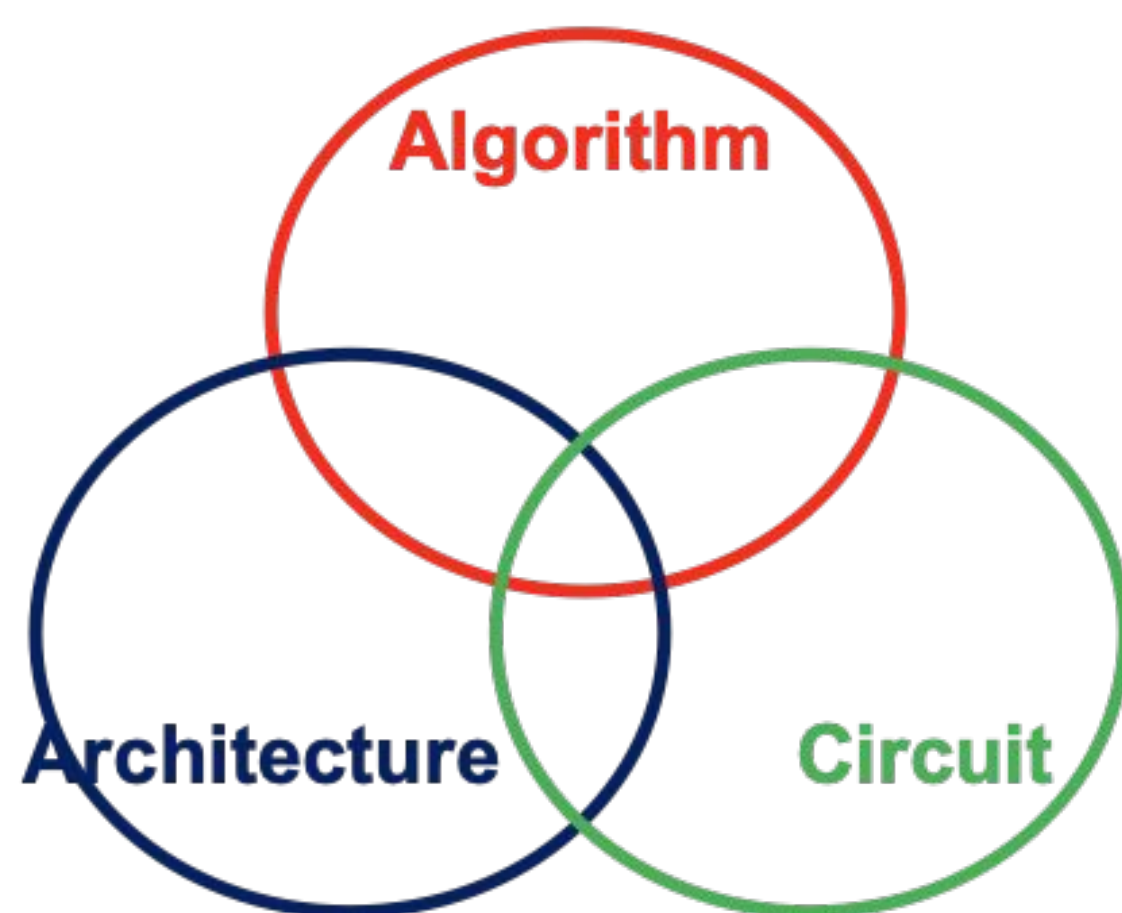2008.08 BS EE, Seoul National University

Experience
2020-Present Assistant Professor, ECE, Seoul National University
2018-2020 Postdoctoral Fellow, Harvard University
2017-2018 Postdoctoral Research Associate, University of Illinois at Urbana-Champaign
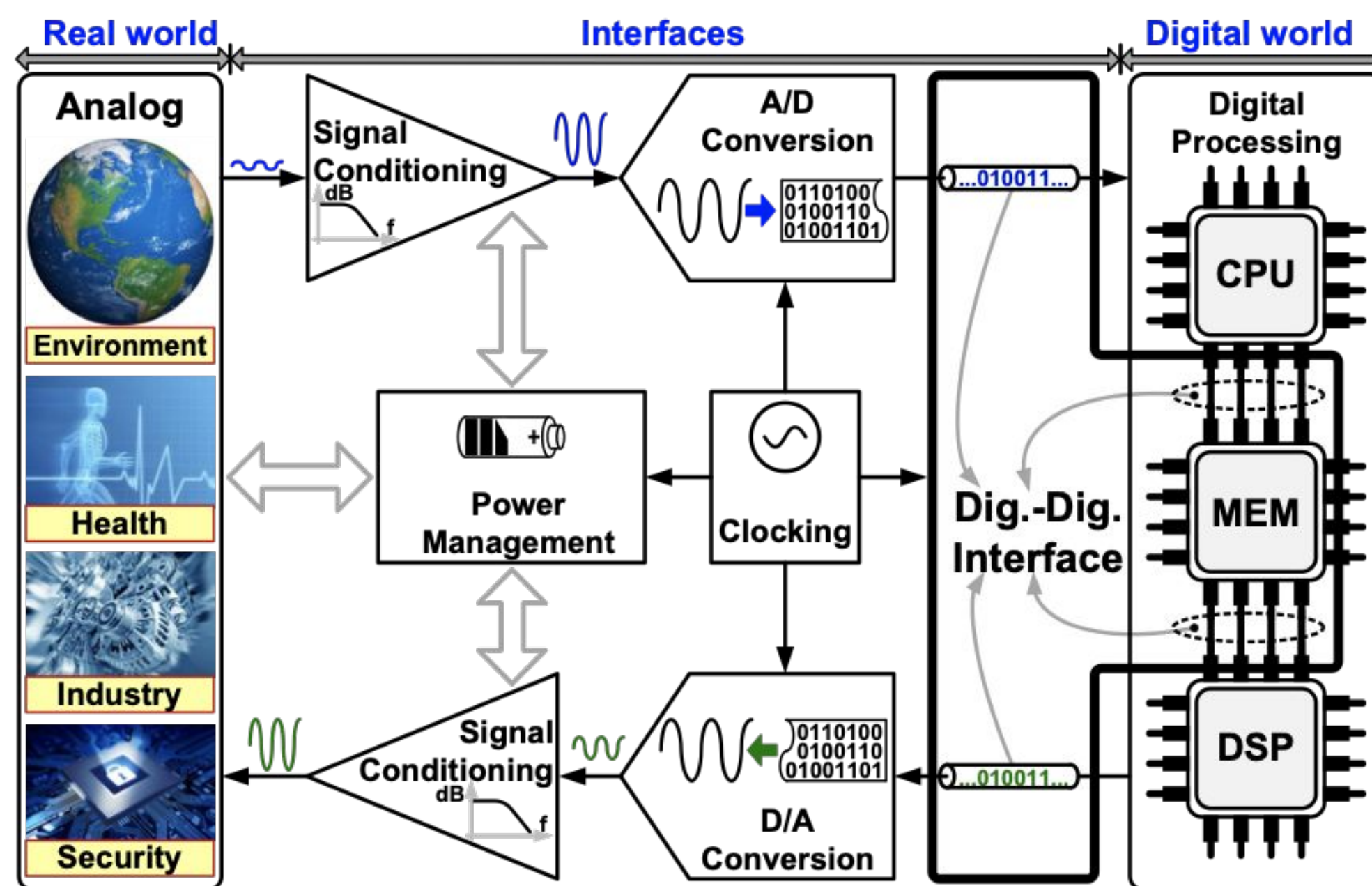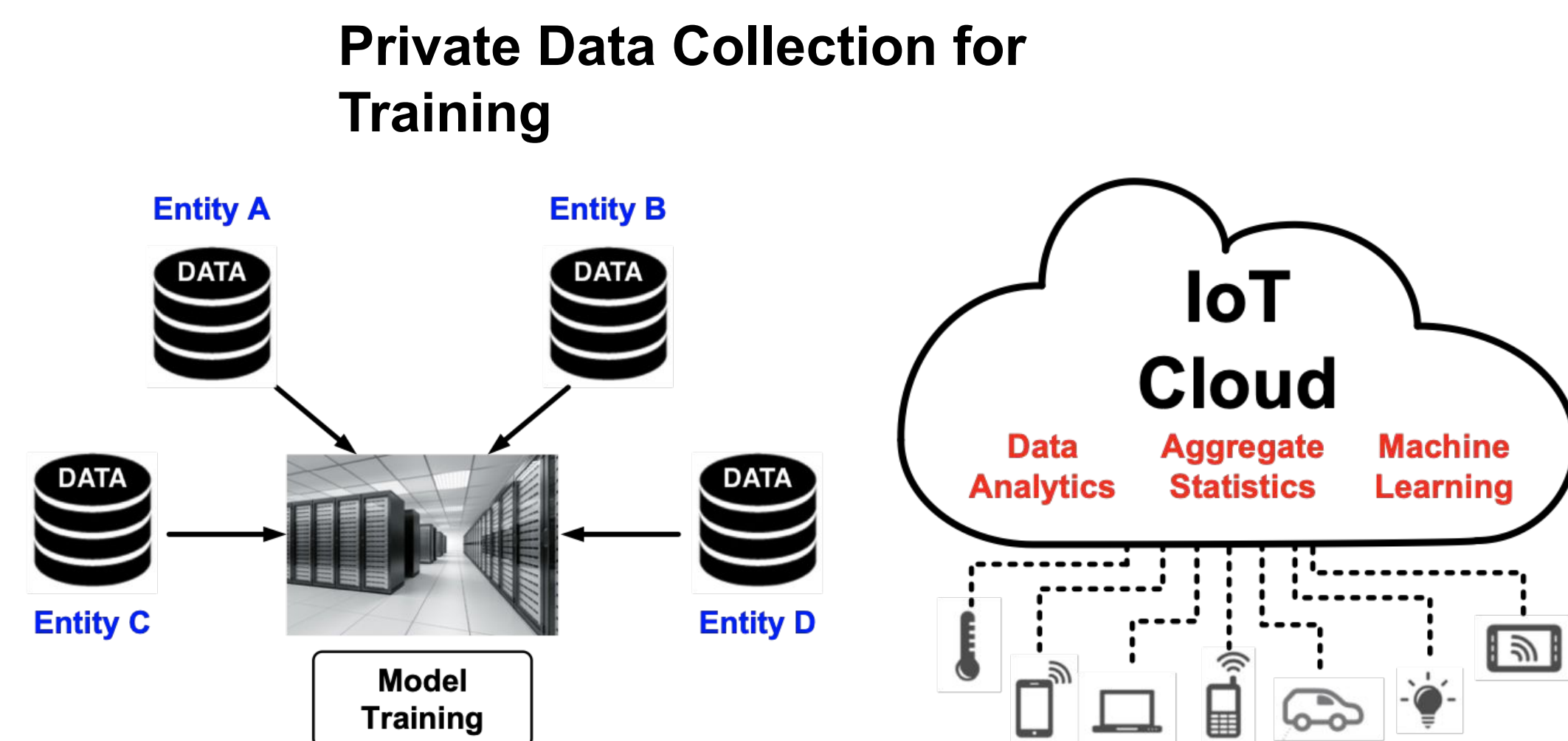
Research Interests

We develop energy-efficient integrated circuits and systems for data processing and communication. In order to improve the system energy efficiency, we explore techniques that highlight a holistic optimization of algorithm, architecture, and circuit-level opportunities. Some of the research projects that have been done so far are shown below.

We are always looking for talented graduate students. If you are interested in joining our group, please email me (wooseokchoi@snu.ac.kr).
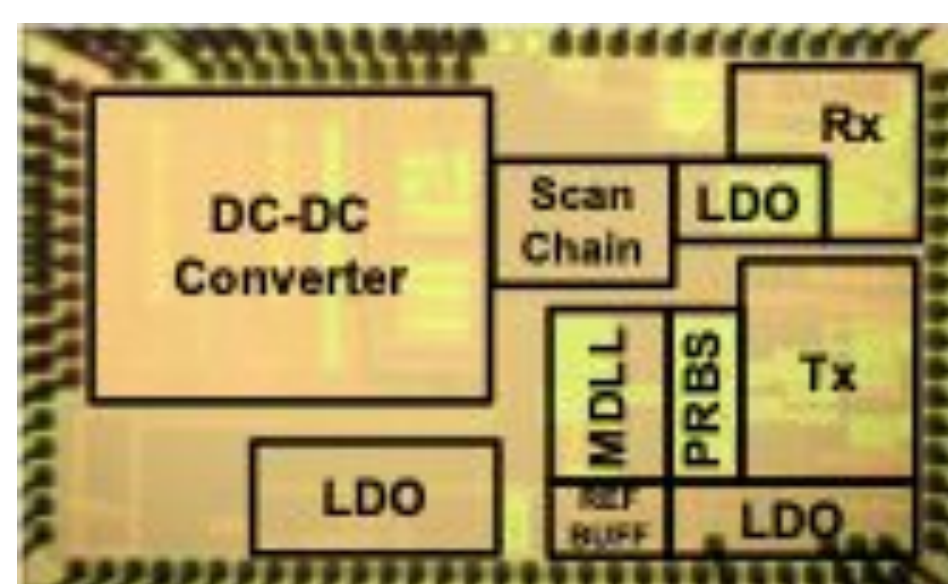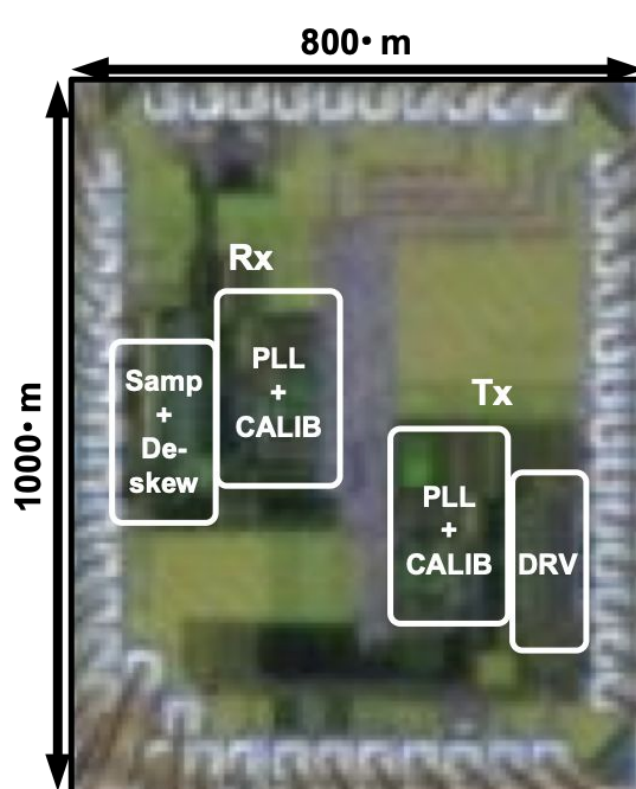
Energy-Efficient Integrated Circuits

[ISSCC'15, JSSC'18]: NTV Operation

Wireline Transceivers

[ISSCC'16]: Rapid On/Off + DVFS
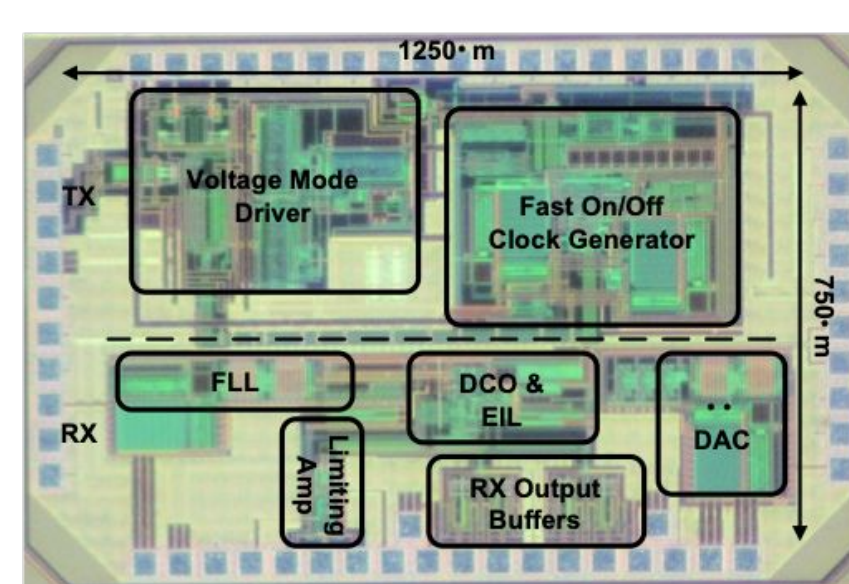
[SOVC'13, JSSC'15]: Rapid On/Off

Power Converters

[JSSC'18]: Time-based Controller

CDRs & PLLs

[JSSC'19]: Sub-baud-rate CDR

[JSSC'19]: low-area, peaking-free

Privacy-Preserving Machine Learning Systems

Private Data Collection for Training

[ISCA'18]: Private data collection using local differential privacy implemented on ULP hardware

Private Inference on Cloud
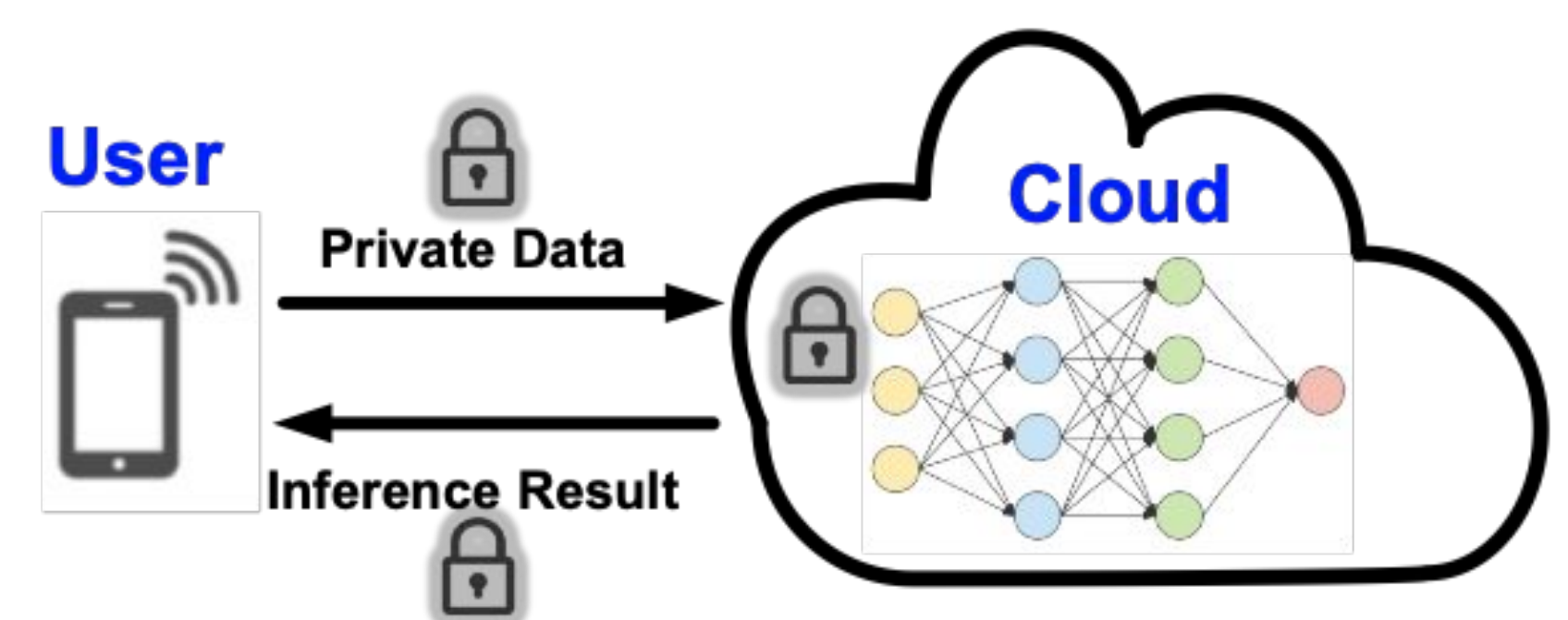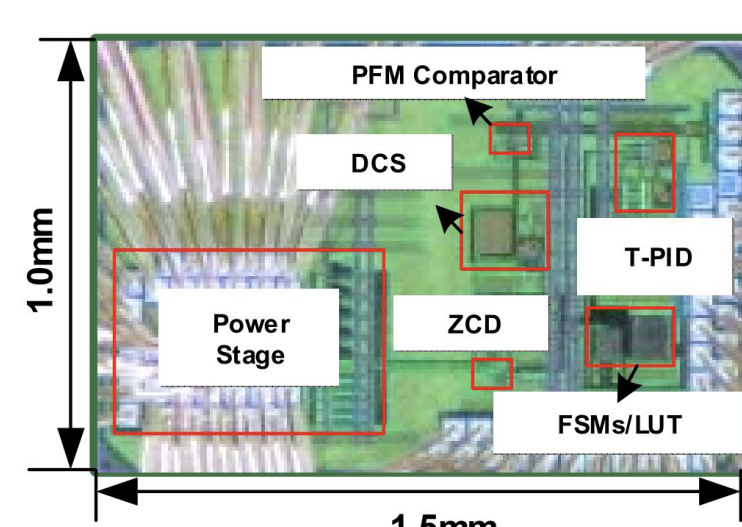
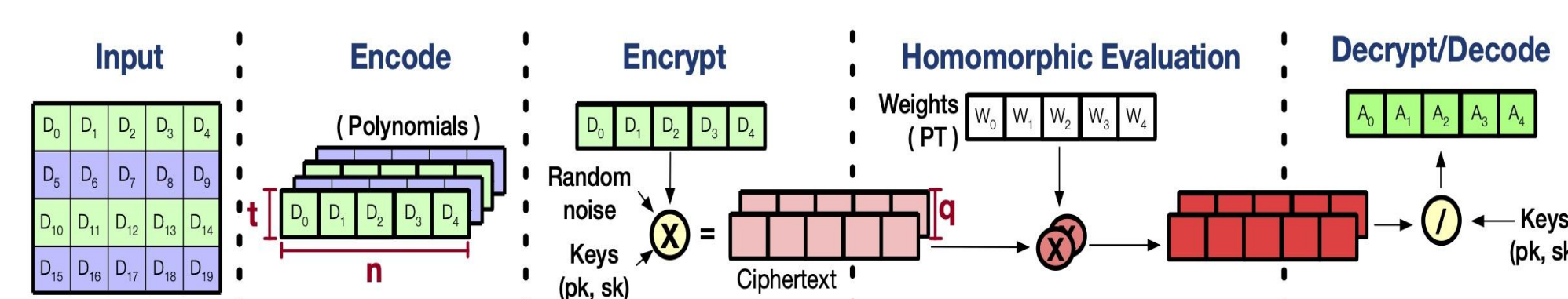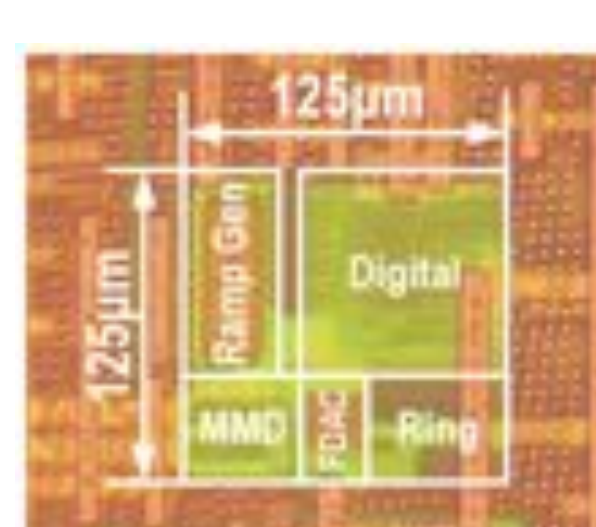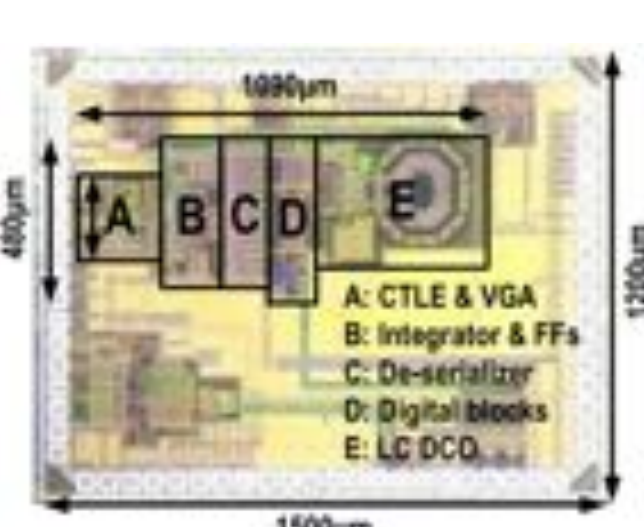Algorithm/hardware co-design of private machine learning inference systems using cryptographic techniques such as homomorphic encryption and secure multiparty computation