Development of C programs for Convolutional Neural Network Accelerators

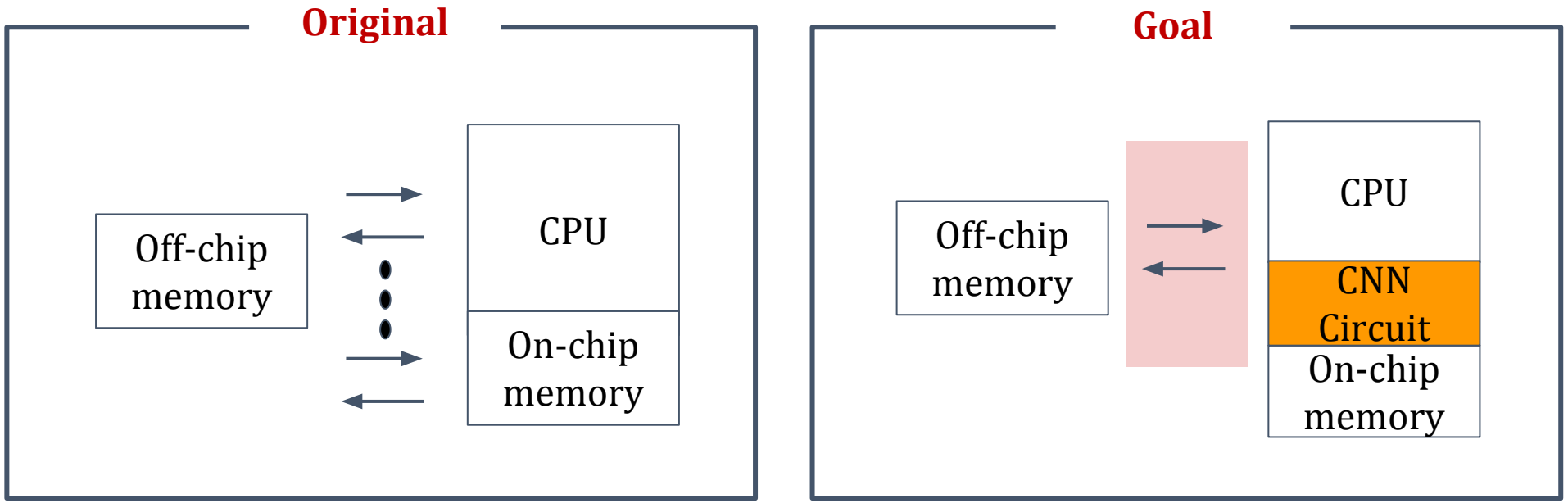
JiYoung An, Sujin Kang
Prof. Nikil Dutt , Kenshu Seto, Hamid Nejatollahi

Dept. of Computer Engineering in Kyung Hee ,University
Dept. of Computer Engineering in Hanyang University
University of California Irvine
University in Tokyo

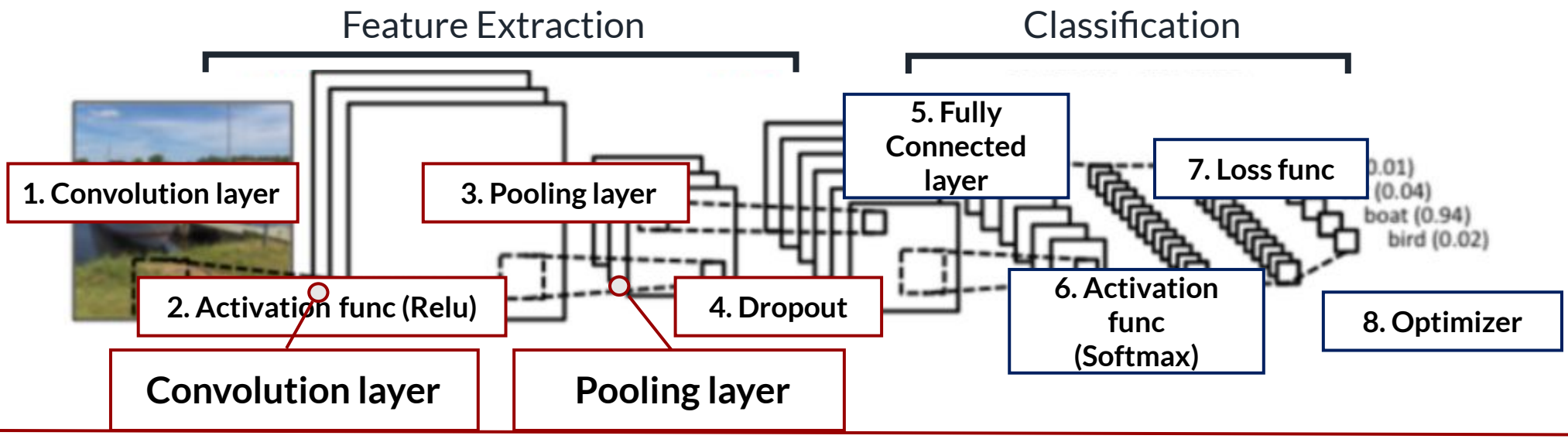
1. Project

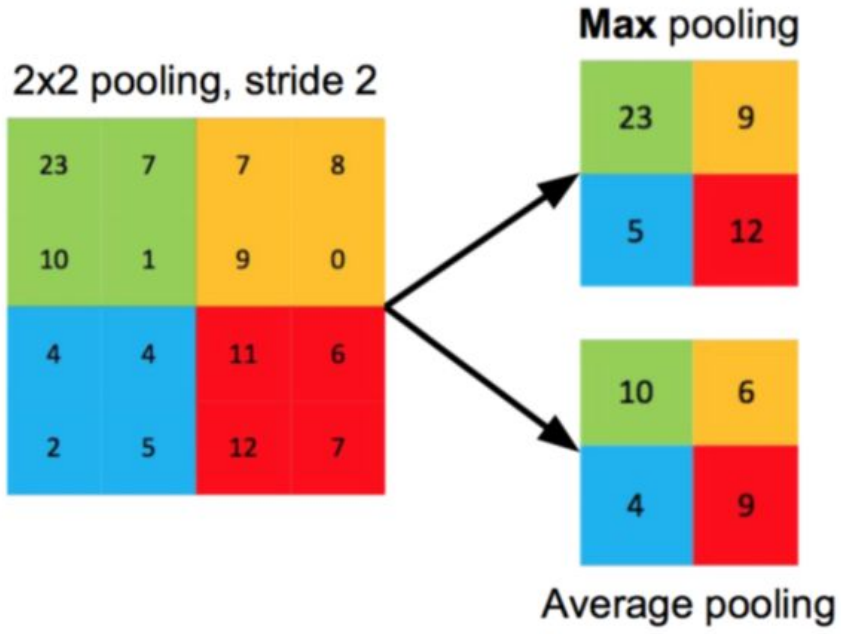
Acceleration of Convolution Neural Networks to embed in light machine

Focus on Reducing Memory access time



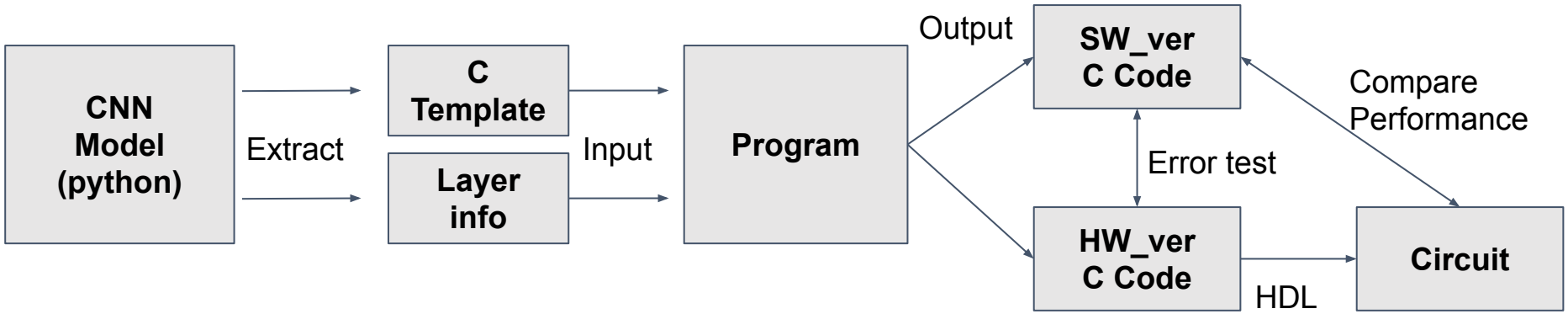
2. Background



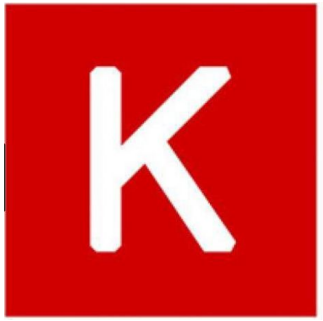


3. Work Process and Tool

1) Work process



2) Environment and Tool



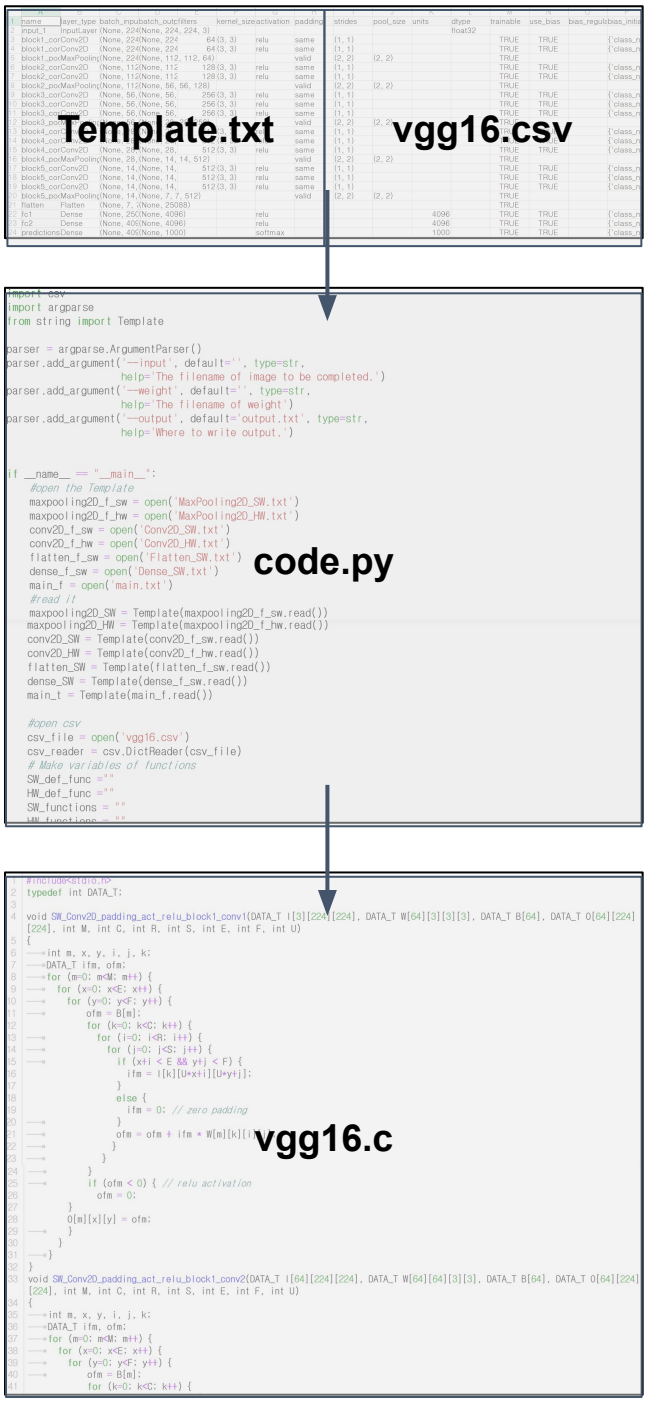
4. Work Progress

1) Previous Work

- Understanding the concept of CNN , HDL and FPGA
- Install Vivado HLS
- Template for VGG 16
- Converter Program

2) Future Work

- Extend Template to various models
  - VGG19, RasNet 50, MobileNet
- Test Code
- Build Circuit
- Compare Performance between HW and SW version



Question