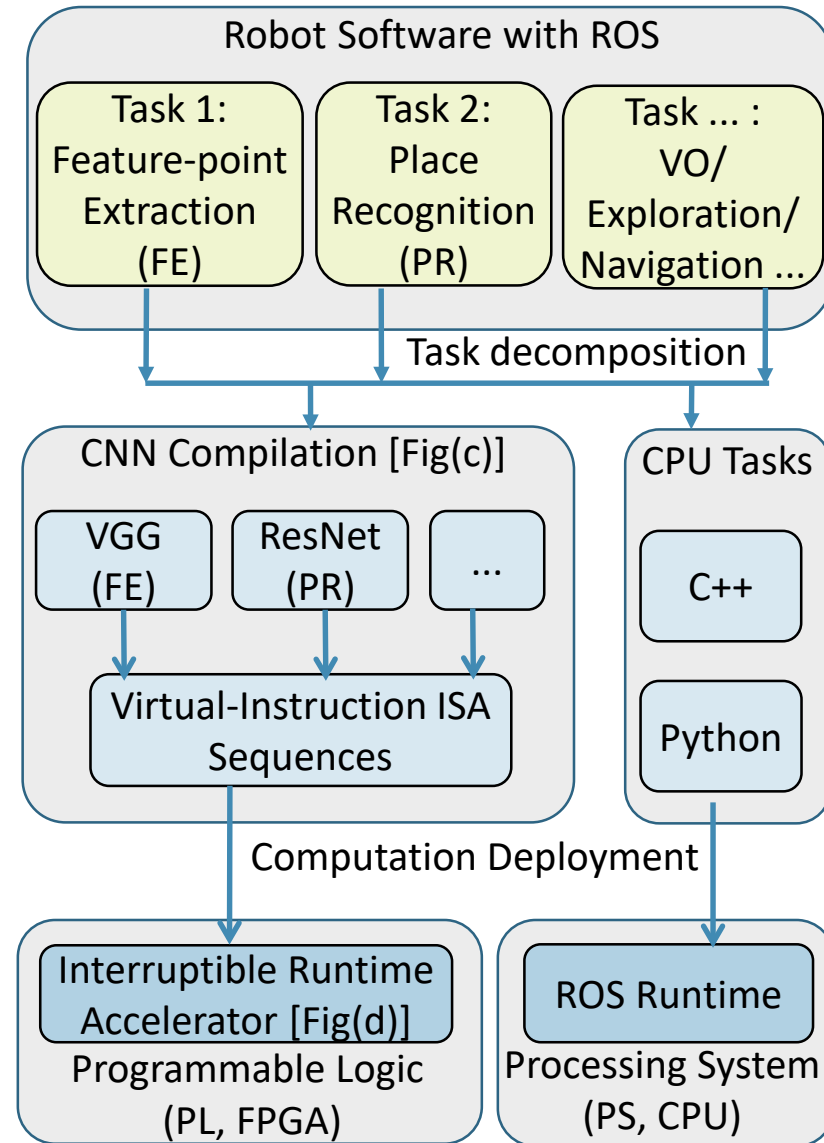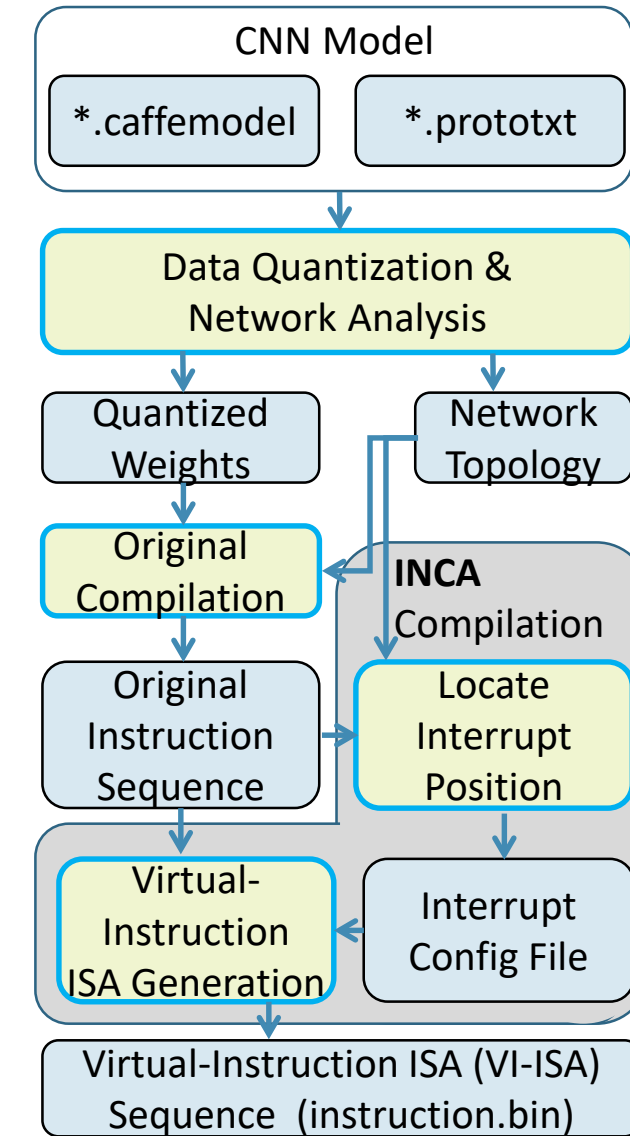(a) Interruptible CNN accelerator to solve the hardware conflict when different tasks request the same accelerator at the same time.

(b) INCA framework. Step1, the different tasks in the robot are decomposed to CNN part and non-NN part. Step2, the CNN part are deployed to interruptible accelerator and the non-NN part to the CPU.

(c) At **compilation**, INCA adds virtual instructions to normal instructions, and generates the virtual-instruction ISA (VI-ISA) sequence.
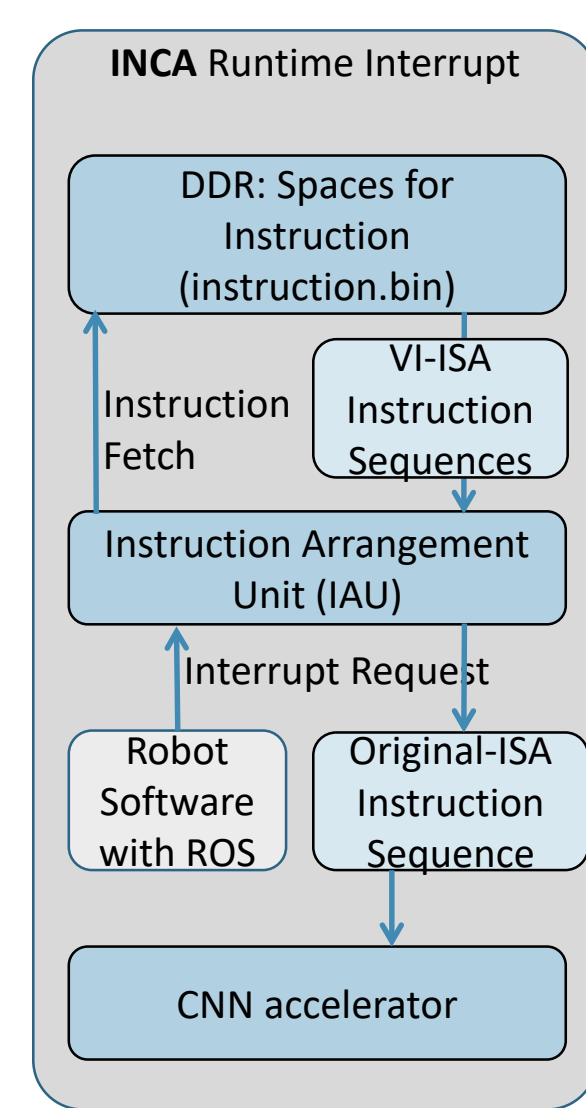
(d) At **runtime**, IAU translates the VI-ISA sequence to original ISA sequence executed on the accelerator.