EE / CPRE / SE 491 - sdmay20-38
iFPGA - Intermittent Intelligent FPGA Platform
Week7 Report

11/11/19 - 11/15/19
Client: Henry Duwe
Faculty Advisor: Henry Duwe

Team Members:

Jake Tener - Team member, SW focus
Jake Meiss - Team member, HW focus
Andrew Vogler - Team member
Zixuan Guo - Team member
Justin Sung - Team member

Weekly Summary

The goal of this week was to continue researching and progress towards full integration of the SW and HW. Researched into the HW design to support running the SW on the platform and configuring the SW to be run on the platform.

Past Week Accomplishments

- HW - Justin Sung, Andrew Vogler, Zixuan Guo
    - Synthesized the microprocessor 8051 on the nano, realized that it takes up 87% of the PL space, and is thus unfeasible.
    - Slight changes to the HW flow since some of the IP cores had illogical connections to each other.

- Power analysis - Jake Meiss
    - Obtained measurements for voltage drops and load currents during normal operation as well as during boot up and in flash freeze mode.
    - Analyzed the data obtained based on the program that was being run to begin to extrapolate the data in order to make predictions about power consumption of our specific application.

- SW - Jake Tener
    - Debugged the SW and verified that it is now working as intended in Tensorflow Lite.

Pending Issues

- In-rush power measurement could not be performed since the equipment was not sensitive to detect the small change.
    - No resolution at this time.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Jake Tener	SW	8	87
Jake Meiss	Platform/Harvester power analysis	8	87
Andrew Vogler	HW	8	87
Zixuan Guo	HW	8	87
Justin Sung	HW	8	87

Plans for Coming Week

- Research into the logistics of linking a TI MSP430 with the Microsemi IGLOO nano.
  - Data sharing protocol
  - I2C or SPI
- Continue working on converting and debugging the SW to be compatible with the HW platform.
- Research better methodology for in depth power consumption analysis as well as working on expanding our diagrams to include power sequencing in order to begin to select specific parts to order