Independent Research Project: ECSE 4940 or ECSE 6940

Who: undergraduate seniors or master students

Topic: FPGA programming for optical machine learning

Qualification:

* Completed ECSE 2660 (COCO) and received good grade
* Have exposure to FPGA programming
* Have taken ECSE 4770 or 4780 is a plus

Detailed description:

We are looking for a highly motivated and dedicated student with excellent academic records to participate in an optical machine learning project. The machine learning algorithms have been developed in Matlab and demonstrated successfully on the optical hardware. In Fall 2020, we are looking for a student who can implement a small portion of the computation algorithms on FPGA. A CYPRESS FPGA module (CY8CKIT-042-BLE-A) with built-in Bluetooth connection will be provided to the student.

The student will participate in this research project in the form of independent study (3 credits). Depending on the planned research goals, the course is offered either at undergraduate level (ECSE 4940) or as a graduate independent study class (ECSE 6940). The selected student will work alongside with my other graduate students and have an opportunity to be exposed to hardware-based machine learning/artificial intelligence research. With good research outcome, the students will also have an opportunity to co-author journal/conference articles.

The student will work remotely and is given remote access to the lab's computers, servers and software. The students will meet with his/her mentor online and submit a report biweekly.

Interested students, please submit your resume and a copy of your transcript to Prof. Rena Huang at [huangz3@rpi.edu](mailto:huangz3@rpi.edu).