Using FPGAs for Spectrum Sensing and Modulation Recognition Project

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Project Overview

- Project seeks to use machine learning to recognize different wireless devices
- Use software defined radios (SDRs) to record various devices as training data for neural nets
- Classify type of device based on RF signature

A little background...

- × Training neural networks
- × Synthetically generated training data
- × Tools
  - × GNURadio
  - × USRP

Last Week

×   Artificial WiFi packet generation at the physical layer
×   MATLAB and WLAN waveforms
×   Go UDP client /server

Tasks for this week

- Finished reading of chapter 3
- Learning the syntax of golang and be familiar with goroutines and go channels
- Learn the hardware design for FPGA material
- Learn how to map FPGA devices to goroutines
- Doing more research based on the Spectrum Sensing and Modulation Recognition

Plans for next week

- **Finish reading the given reading material**
- **Write a simple UDP client and server program in Go implementing goroutines and goprocedures**
- **Practice the testbed procedures**
- **Drawing the structure of the simple FPGA devices**
- **Figure out how to implement FPGAs into Go program**

Questions?