Using FPGAs for Spectrum Sensing and Modulation Recognition Project

Group Members:
Ryan Davis
Zhuohuan Li
Sid Mandayam

Advisor: Richard Martin
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Ryan Davis  
Class of 2021  
Rutgers University  
Computer Engineering and Computer Science

Zhuohuan Li  
Class of 2020  
Rutgers University  
Computer Engineering

Sid Mandayam  
Class of 2022  
Rutgers University  
Computer Science and Mathematics
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?