Week 6 Update

LoRa

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Acomplishment

- Created a half-duplex peer-2-peer interface with both 915MHz and 433MHz LoRa devices.
- Understand and preparing testing for understand Spreading Factor and bandwidth.

Unknowns

Known Unknowns

- How to use and program LoRa devices (Via ESP32)
- How to create a half-duplex LoRa network
- Antenna regulations (different power regulations)

Unknown Unknowns

- The regulatory statues on LoRa transmission
  - Duty Cycle limitations
  - 433MHz vs 915MHz frequency

Encountered Challenges

- Combination of incompatble 915MHz devices with 433MHz devices

Learning With AI pt.1

- **Being Direct and explicit matters**
  - Don't query "*Tell me about LoRa FCC regulations*"
    - Too broad - it assumes only the 915MHz device
- ***With* who you chat with and *what* you query is**
  - As Cho said, the AI matters
  - ***ChatGPT***
    - more generic, good introduction to info
    - Feels like a ***people pleaser***
  - ***Claude***
    - more techinical and direct

Learning with AI pt. 2

Serialization

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- Data converted to byte sequences
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Parallelization

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- Data sent as multiple bits through multiple lines
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Next steps

- Create testing simulation
  - Add SD card reader for local logging
  - Add GPS/GNSS module for accurate positioning
- Begin Testing

Questions?