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ECE 485

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Internet of Things Architecture Outline

1. Abstract

* Architecture based on function: hardware, protocols, security, network

1. Introduction

* Growing IoT infrastructure
  + smart home and interest of amazon/google
  + incorporation into industrial systems and power grids

1. Background

* Explanation of IoT and smart devices
  + Hardware – hubs, controllers, devices, homebrew
  + Protocols – BLE, Wi-fi, Zigbee
  + Security – Device/Network
  + Network Design – Home, warehouse, city

1. Cool Thing

* Smart city integration – focus on network design/architecture
  + Hardware –
    - power
    - public transit
    - manufacturing
    - office buildings (home similarities)
    - schools
    - public health
  + Protocols – LTE / 5G
  + Security – air gaps, privacy
  + Network Design – mesh
    - Integration of controllers and variety of devices
    - Benefits of using together / concerns of metadata

1. Cool Stuff

* Homebrew technology
  + incorporation across hardware/protocols
  + increased security
  + proton board/chip

1. Looking Forward

* Decentralized internet
* privacy/security concerns
* automation

1. Conclusion