

Redes Sem Fio

Programa

- Introdução: Visão Geral, Aplicações, Camadas de Redes e Arquiteturas de Redes
- Background: Unidades de Medidas, SNR, SINR, Capacidade da Rede.
- Propagação de Sinal: espaço livre, dois raios, multi-caminhos, sombreado, descrição estatística do canal sem fio.
- Modelos de Conectividade: Modelo Protocolo, Modelo Físico, Modelo de Disco, UDG, QUDG, modelos de interferência.
- Algoritmos de Grafos aplicados a Redes Sem Fio: Cobertura de Vértices, Conjunto Dominante, Conjunto Independente, Coloração de Grafos.
- Métricas de Roteamento: número de saltos, ETX, PER, ETT, BG-ETT, WCETT.
- Simuladores: COOJA, TOSSIM, Sinalgo, OMNET, SUMO, Veins.
- Modelos de Mobilidade:
 - o Modelos de Mobilidade de Entidades: Random Walk, Random Waypoint, Random Direction Model, Probability Random Walk, Boundless Simulation Area, Gauss-Markov, City Section
 - o Modelos de Mobilidade de Grupos: Exponential Correlated Random Mobility Model, Column Mobility Model, Nomadic Community Mobility Model, Pursue Mobility Model, Reference Point Group Mobility Model
 - o Urban Mobility Models
 - o Meandering Mobility Model
- Protocolos de Roteamento:
 - o Distance Vector, Link State
 - o Mobile IP
 - o Pro ativos: DSDV, OLSR
 - o Reativos Protocols: DSR, AODV
 - o Híbridos: ZRP
 - o Geograficos: GPSR
 - o Roteamento Beacon Vector
- Network Coding: vantagens, aplicabilidade, Fluxo máximo menor corte, capacidade multicast, codificação linear, codificação aleatória linear, problema da coleta de cupons, protocolos.
- Padrões: 802.11, Zigbee, 6LoWPAN
- Redes de Sensores Sem Fio
- Redes de Sensores Aquáticas
- Redes Veiculares
- IoT
- Redes Satélites

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