Wireless Network Personalization

Optimizing User Satisfaction with Predictive Analytics

Background

Current wireless networks are designed with a focus on worst-case scenarios, leading to over-engineering and inefficient resource use. This conventional approach assumes uniform user satisfaction leading to unnecessarily high Quality of Service (QoS) levels that exceed actual user requirements. As a result, network efficiency is compromised, and resources are underutilized, reducing the system's overall performance.

Description of the Invention

Our Wireless Network Personalization technology optimizes wireless networks in real-time, at the application and end-user layer. Using predictive analytics, big-data techniques and machine learning it effectively tailors performance to optimize individual user satisfaction and resource utilization.

Key Features:

- Zone-of-Tolerance Model: Quantifies and captures real-time user satisfaction non-intrusively.
- Multi-Objective Optimization: Efficiently balances resources, revenue, and user-specific QoS requirements.
- Predictive Analytics: Leverages machine learning to forecast user needs and optimize resource allocation accordingly.

Publications:

R.Alkurd, et al. IEEE Communications Magazine, vol. 58, no. 3, pp.18-24 (https://ieeexplore.ieee.org/document/9040257)

Key Benefits

- Resource Efficiency: Optimizes resources for critical applications like public safety and autonomous vehicles.
- Enhanced User Satisfaction: Delivers personalized service, improving user experience, retention, and acquisition.
- Operational Flexibility: Empowers operators to customize services and pricing, enhancing retention & attracting a diverse user base.
- Crisis Management: Prioritizes resource allocation for critical applications during emergencies.

Applications

Applicable to any network needing user feedback for service optimization, including wired networks and WiFi. Key sectors include:

- Telecom Operators
- Vendors and Manufacturers
- New Market Entrants to Wireless and Networking
- Big Data and Analytics Companies

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