Exploring Machine Learning For Ehealth Monitoring and Personalized Recommendations For Elderly Patients

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Abstract:

This study examines the application of machine learning (ML) in health monitoring and personalized recommendations for elderly patients using data from Twitter using the Apify.com online data scrapper. ML, a branch of artificial intelligence, enables computers to learn from data, identify patterns, and make predictions without explicit programming. eHealth refers to digital technologies like mobile apps and electronic health records, which improve healthcare delivery and patient outcomes. The research utilized Support Vector Machines (SVM) and XGBOOST algorithms to analyze health data, with XGBOOST showing superior predictive accuracy. The XGBOOST model facilitates precise monitoring of vital signs, early detection of health issues, and personalized interventions, including medication adjustments and lifestyle recommendations. Integrating ML-driven solutions enables healthcare institutions to provide proactive, personalized care, improving patient outcomes, promoting elderly autonomy, and reducing the strain on healthcare systems. This framework highlights the potential of XGBOOST-based models in developing robust health monitoring tools. The implications are significant for governments, health practitioners, communities, and patients. Governments can benefit from more efficient healthcare policies and resource allocation, especially for aging populations. Health practitioners gain enhanced decision-making tools for early diagnosis and personalized care, improving patient outcomes. Communities can experience healthier, more independent elderly populations, while patients enjoy improved quality of life through personalized recommendations and proactive monitoring. Generally, this approach can reduce healthcare costs, enhance patient autonomy, and optimize care delivery.

Keywords:

eHealth, Machine Learning, Patient Monitoring, Patient Recommendation, Elderly Patients.