

Towards Digital Health: Integrating Federated Learning and Crowdsensing through the Contigo App^{*}

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Abstract. The growing demand for effective healthcare has driven advances in digital health. This digitization supposes a challenge from the point of view of privacy and the treatment of sensitive personal data while providing non-intrusive and easy-to-use digital mechanisms. This paper presents Contigo: a health monitoring system that integrates a mobile application and a web platform for detecting anomalies using Federated Learning techniques. The mobile application collects health and personal data to train a personal predictive model. It is then anonymized and aggregated into a global model to improve efficiency, reducing adoption time for new users. At the same time, the web platform allows healthcare professionals to access the data for its analysis and validation. Contigo addresses the need for user-friendly digital mechanisms in healthcare, addressing privacy concerns while improving data-driven decision-making for professionals and personalized patient care. This approach ensures privacy and facilitates continuous model improvement, providing personalized, proactive, and non-intrusive patient health analytics.

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