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Surgescope and CareRT: Integrative Healthcare based on real-time Artificial Intelligence

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Abstract

Surgescope has the mission to reduce the impact and outcomes of colorectal cancer in patients by harnessing free margins during tumor resection surgeries. Surgescope bridges augmented surgery and digital histopathology into a live intraoperative and collaborative suite. Through real-time observation of tumors with a fluorescence confocal laser endomicroscopy, Surgescope provides AI-powered decision making tools for surgeons and pathologists to assess tumor markers and ensure free margins during surgery. Surgescope can change the current margin assessment workflows avoiding recurrence and aggressive mitigation treatments as well as offering opportunities to optimize existing protocols in a way that reproduces the gold standard of histopathological analysis. Ensuring free margins has a tremendous impact in patients and can reduce a great burden for the healthcare system and the society. On the other hand, CareRT aims to monitor MS patients' daily life for an early detection of progression integrating validated cognitive and psychomotor assessment tools seamless in patients' lifestyle and clinic routine through devices, apps and wearables. Through privacy-respectful federated Machine Learning, data will be holistically analyzed combining individual and collective patterns to understand early signs of progression. CareRT will harness MS patients' quality of life and provide an early treatment of progressive forms of MS. Both approaches provide real-time screening in different scenario through AI and appropriate sensing mechanisms.

Biography

David Pastor-Escuredo is a Ph.D. from UPM in Artificial Intelligence and Complex Systems. He was a data-driven sustainability pioneer of several United Nations agencies (UNGP, WFP, UNHCR) in AI and Data for SDGs. Currently he works for UNICEF. He leads Digital Innovation projects and Collective Intelligence managing partnerships in UCL and with MIT research centers and labs. He is also a member of the Ethics and Digital Revolution group of Climate-KIC European Mission for neutral cities. He works in Data and AI for Healthcare within the program Catalyst Europe EIT Health / MIT and was awarded by EIT Health as best Catalyst. Europe'20 project and Rising Star. He owns LifeD Lab where he implements cutting edge innovation for a better future within these initiatives.