Rapid Sustainable Governance based on Convolutional Neural Networks

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Abstract

Sustainable governance requires fast decision-making considering many variables, indicators and indexes. Boards need to rapidly integrate these variables to establish priorities for investment, monitoring, evaluation and decision-making. Current data-driven governance sticks to indicator-based time series and enriched reporting. We propose the use of Convolutional Neural Networks to produce decision patterns in real-time over priority maps. Priority maps are 2D image-like matrices with normalized heatmaps comprising a number of variables of observation and a number of instances (i.e. branches, customers, etc). Priority maps are an evolution of streetlight maps with a wider range of normalized values for each variable. A CNN-based workflow is applied to combinations of the priority map to establish a decision pattern that integrates all the complexity of the map. This approach is more suitable for Governance than single cell color-detection that humans normally perform.

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.