Big Data of the Past, from Venice to Europe

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Abstract

In 2012, the Ecole Polytechnique Fédérale de Lausanne (EPFL) and the University Ca'Foscari launched a program called the Venice Time Machine, whose goal was to develop a large-scale digitisation program to transform Venice's heritage into 'Big Data of the Past'. Millions of register pages and photographs have been scanned at the State Archive in Venice and at the Fondazione Giorgio Cini. These documents were analysed using the deep-learning artificial-intelligence methods developed at EPFL's Digital Humanities Laboratory in order to extract their textual and iconographic content and to make the data accessible via a search engine. The project has now expand to a European scale, including more than 500 institutions and 20 new cities jointly constructing a distributed digital information system mapping the social, cultural and geographical evolution of Europe. The project build upon existing platforms such as Europeana, and accelerate their development. While Europeana drives transformation throughout the cultural heritage sector with innovative standards, infrastructure and networks, Time Machine aims to design and implement advanced new digitisation and artificial intelligence technologies to mine Europe's vast cultural heritage, providing fair and free access to information that will support future scientific and technological developments in Europe.

Bio

Prof Frédéric Kaplan holds the Digital Humanities Chair at Ecole Polytechnique Federale de Lausanne (EPFL) and directs the EPFL Digital Humanities Laboratory (DHLAB). He conducts research projects combining archive digitization, information modeling and museographic design. He is currently directing the "Venice Time Machine", an international project in collaboration with the Ca'Foscari University in Venice and the Venice State Archives, aiming to model the evolution and history of Venice over a 1000 year period, He is a member of the steering committee of "Time Machine FET Flagship", a European project involving more than 200 institutions, in competition for a 1 billion euros funding from the European Commission. In parallel of his scientific work, Frédéric Kaplan participated to exhibitions in several museums including the Biennale of architecture in Venice, the Grand Palais and the Centre Pompidou in Paris and the Museum of Modern Art in New York.

Frédéric Kaplan graduated as an engineer of the Ecole Nationale Supérieure des Telecommunications in Paris and received a PhD degree in Artificial Intelligence from the University Paris VI. Before founding the Digital Humanities Laboratory, he worked ten years as a researcher at the Sony Computer Science Laboratory and six years at the EPFL pedagogical research laboratory. He was also the founder and president of OZWE, now one of the worlds leading studios in immersive gaming.

Frédéric Kaplan published more than a hundred scientific papers, 8 books and about 10 patents. He is the chief editor of Frontiers in Digital Humanities and co-directs the Digital Humanities book collection at EPFL Press. He created the first Digital Humanities Master course in Switzerland and is now taking an active role for shaping a complete new curriculum at EPFL. He was the co-local organizer of the Digital Humanities 2014 conference in Lausanne, the largest scientific meeting ever conducted in this domain.

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