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PREDICTIVE POLICIES A.I.

- In order to carry out this research, information on the use of artificial intelligence (AI) for predictive crime policies, was searched in different sources, however, only general discussion and debate on AI was found, but not specifically on predictive crime policies. For example, the Ministry of Science and Technology of Chile in 2019 convened various actors to develop the National Policy on Artificial Intelligence, however,this policy did not address aspects related to the development of AI in the field of predictive policing or predictive justice.

- The sources used were public sources, such as a search for doctrine, papers, or associated national research, and interviews with specialists. In terms of doctrine, no precedents were found, perhaps due to the scarce use of AI in this field. The most important precedent found is a paper entitled "Crime Prediction using Patterns and Context[1]", exclusively national research, which creates a geo-referenced crime prediction system.

- Also, requests for information were made to public institutions that had some connection with the investigation, requesting information through the Transparency Law No. 20,285 on Access to Public Information. The institutions to which information was requested were: Undersecretary of Crime Prevention, under the Ministry of Interior and Public Security; the Financial Analysis Unit, under the Ministry of Finance; the Public Prosecutor's Office; Carabineros de Chile; Investigative Police of Chile; Internal Revenue Service; Administrative Corporation of the Judiciary. Of these requests we only received a response from the Public Prosecutor's Office, Carabineros de Chile, and the Investigative Police. It should be noted that the institution that has the greatest transcendence in defining public policies on this investigation is the Undersecretariat of Crime Prevention, which did not respond to our request for information. In general, all the public institutions consulted that responded did not acknowledge the existence of the use of AI in terms of predictive policing, only in a very tangential way did they mention the existence of any algorithm or software based on AI.

- In the case of Carabineros de Chile, which is the police force with the largest number of personnel and the largest national territory, it denied the existence of the use of AI in its crime prediction system, arguing that its system lacks reasoning or learning. However, this is contradicted by the paper "Crime Prediction using Patterns and Context" mentioned above, since the paper reports on a joint work carried out by scientists from the University of Chile with officers of Carabineros de Chile, who create an AI system on crime prediction.

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[1] Baloian, N., Bassaletti, C. E., Fernandez, M., Figueroa, O., Fuentes, P., Manasevich, R., ... & Vergara, M. (2017, April). Crime prediction using patterns and context. In *2017 IEEE 21st international conference on computer supported cooperative work in design (CSCWD) (*pp. 2-9). IEEE.

- On the other hand, the Investigative Police of Chile, a police force with a smaller staff than Carabineros, and with characteristics more linked to investigation, also noted that it does not have an AI system for predictive surveillance, but that in 2020 it acquired a facial recognition software, whose construction used artificial intelligence to obtain the mathematical model that allows face detection.

- The Public Prosecutor's Office, which is the body in charge of directing exclusively and excluding the facts constituting crimes, also indicated that they do not have AI, however, they informed that what could be closer to artificial intelligence is the advanced analytical system, which is a mathematical model of classification and clustering of unstructured information, with a supervised continuous learning model. That this advanced analytical system technology is regularly used when it is necessary to perform searches of some complexity due to the large volume of data to be consulted with specific criteria in a limited time. He also informed that this tool is used through an application developed by a company (GovMS) especially for the Public Prosecutor's Office, which provides consulting and development services in BI (Business Intelligence) technologies.

- We also interviewed Raúl Manasevic, Director of the Center for Analysis and Modeling in Security (CEAMOS) of the Faculty of Physical and Mathematical Sciences of the University of Chile, who informed us in detail about the crime prediction system developed for Carabineros de Chile, research that was reflected in the paper "Crime Prediction using Patterns and Context".

- According to the information we have this work began to be developed in 2015, in the urban area of the Metropolitan Region of Santiago, the capital of the country and the most populated area of Chile. It uses data on crimes of robberies committed in homes, armed robberies and violent robberies, data provided by the Department of Criminal Analysis of Carabineros de Chile.

- The way in which this crime prediction system is created is to mix of two approaches of "expert system" and "machine learning", combining three predictive algorithms: Prospective method, Dempster -shafer theory method and Multikernel method, integrating them in a final module.

- This system, according to the information provided by Carabineros de Chile through the Transparency Law, allows to discretize the territory in risk areas of occurrence of crimes, in turn, these risk areas are categorized in a set of squares of 150 x 150 meters, for the grouped crimes of robbery with force and robbery with violence, for a total of 58 communes nationwide that have an adequate rate of crime and for the five shifts following the execution of the process.

- What this AI system would allow is that by identifying the risk area, police patrolling can be increased, which could reduce the occurrence of crime. Since it should be noted that predictive systems do not predict where and when the next crime will be committed, but rather predict the relative level of risk that a crime will be associated with a particular time and place.

- In addition, in an interview with the researcher Raul Manasevic, he told us that they havealso developed crime prevention models for commercial stores (Mall Plaza), in which through two algorithms (Support Vector Machines and Neural Networks), they acquire the ability to predict crimes inside the mall.

- Finally, it should be mentioned that although there is an incipient development of AI in predictive policing, it gives the impression that technological developments introduced in the different institutions are not recognized as AI. Perhaps due to ignorance of the characteristics that give rise to AI or because the people who use them do not have contact with the developers of the technology. On the other hand, the crime prediction system developed for Carabineros is completely innovative, by introducing a methodology of mixing or combining three algorithms, which considerably increases the effectiveness of the crime prediction method. This system is perhaps the most important in the Chilean experience. Notwithstanding the foregoing, there seems to be no interest at a general level and in the public forum, to discuss the consequences or implications of the use of AI in predictive policing, which we can attribute to the lack of development and use of this technology.

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