

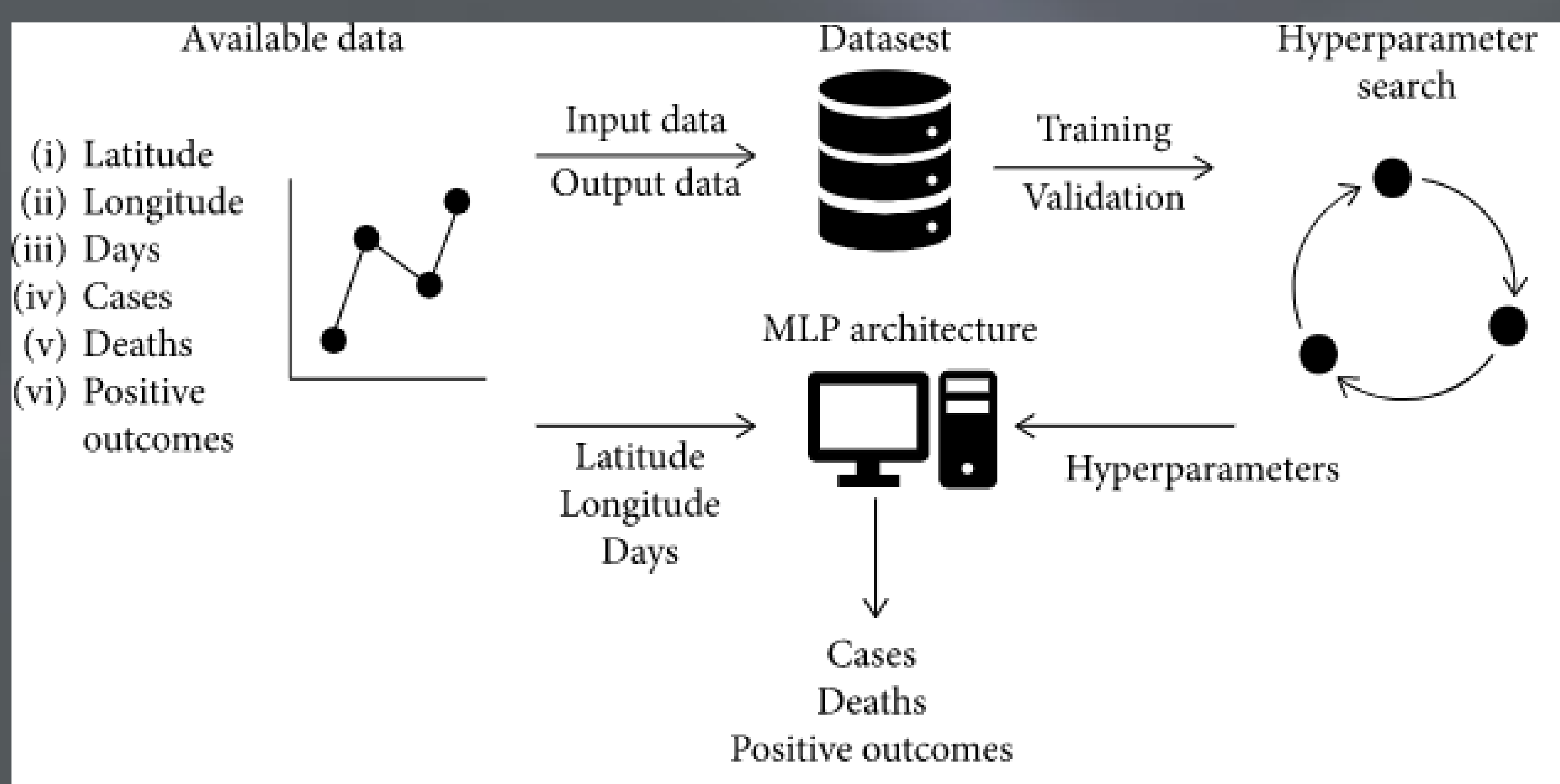
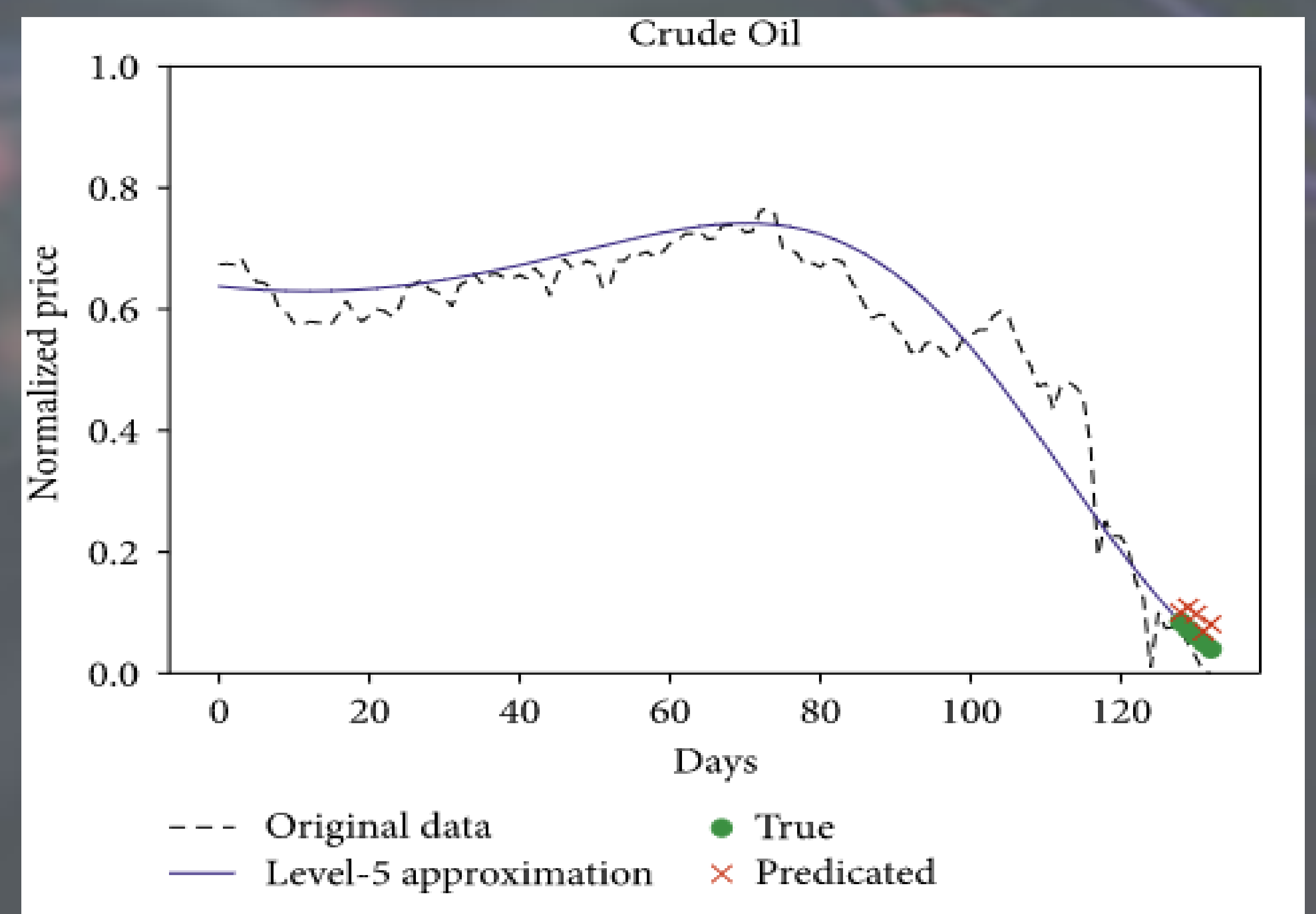
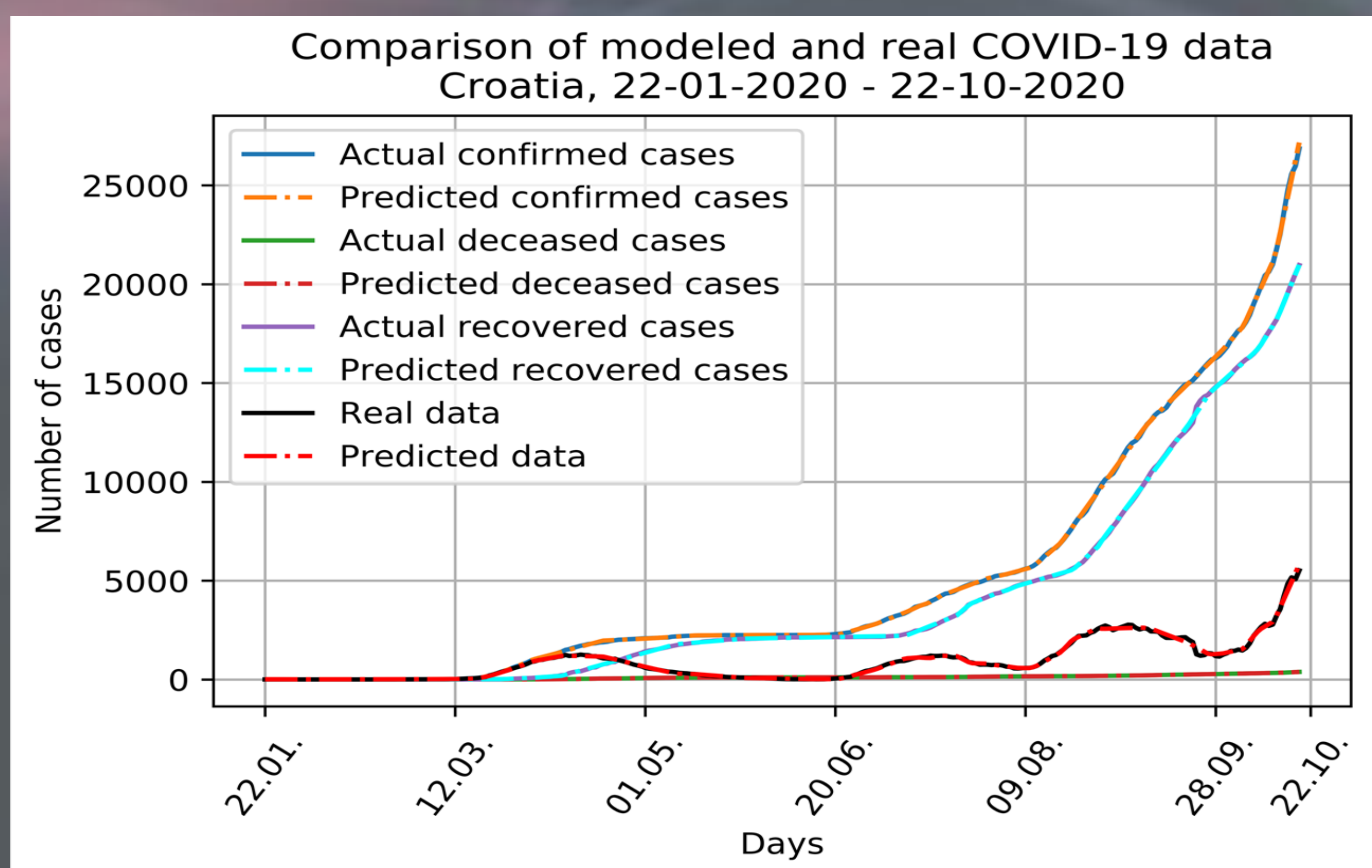
Development of intelligent systems for the prediction of medical and economical effect of COVID-19



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Abstract: Artificial intelligence methods have been shown to be very accurate in classification and prediction tasks. Previous research, including that performed by team members, point to the possibility of using those algorithms in the fight against COVID-19. Within the project, the development of computer system is planned, which will provide support in making strategic decisions to the experts from relevant fields of medicine and economics. Three aspects are planned for modeling: the epidemic spread, outcome prediction and economic impact. Epidemic spread model will develop the models for prediction of infected, deceased and recovered patients, i.e. epidemiology curve model. Personal outcome prediction model will be based on infected patient's metrics, and it will enable the strategic resource allocation of the health system resources – depending on the patient's disease severity. Despite the fact that human lives are the main concern during a pandemic, protecting the stability of the economy is important as well. The analysis of COVID-19 effect on the economy will provide models for early prediction of economical metrics - the state of the global market; and when combined with the system for the number of infected cases, it will enable the development of the optimal strategy to deal with the infection. Due to high interdisciplinarity, this project gathers scientists from the fields of technical sciences, economy and medicine; enabling cooperation amongst different components of the university. It is also connected to the existing, active, projects which enable international cooperation with the goal of using AI to fight COVID-19. The obtained models will be integrated in easy-to-access, web-based, interfaces, allowing the experts to input data and access the model output. Along with the development of COVID-19 related models, this project will test the possibility of AI application and develop algorithms which may be used in the future, similar, health-economy crises.



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