Cover Letter

Curitiba, April 24, 2020.

To Editorial Department of **Chaos, Solitons & Fractals**.

Dear Editor,

We are sending a paper for publication in **Chaos, Solitons & Fractals** Journal. The paper is entitled **"Short-term forecasting COVID-19 cumulative confirmed cases: perspectives for Brazil"**. The manuscript has not been published elsewhere and that it has not been submitted simultaneously for publication elsewhere. Also, we have no conflict of interest with any of the suggested reviewers.

In this paper, autoregressive integrated moving average, cubist (CUBIST), random forest (RF), ridge regression (RIDGE), support vector regression (SVR), and stacking-ensemble learning are evaluated in the task of forecasting one, three, and six-days-ahead the COVID-19 cumulative confirmed cases in ten Brazilian states with a high daily incidence. In the stacking approach, the CUBIST, RF, RIDGE, and SVR models are adopted as base-learners, and Gaussian Process (GP) as meta-learner. The models' effectiveness is evaluated based on the improvement index, mean absolute error, and symmetric mean absolute percentage error criteria. In general, the developed models can generate accurate forecasting, achieving errors in a range of 0.87% - 3.51%, 1.02% - 5.63%, and 0.95% - 6.90% in one, three, and six-days-ahead, respectively. The use of evaluated models is recommended to forecasting and monitor the ongoing growth of COVID-19 cases, once these models can assist the managers in the decision-making support systems.

Thank you for your consideration of this manuscript.

Yours Sincerely,

- **Matheus Henrique Dal Molin Ribeiro - Corresponding author**
  - Affiliation: Professor of Department of Mathematics, Federal Technological University of Parana (UTFPR), Via do Conhecimento, KM 01 - Fraron, 85503-390, Pato Branco, Parana, Brazil; PhD Student at Industrial & Systems Engineering Graduate Program (PPGEPS), Pontifical Catholic University of Parana (PUCPR), 1155 Rua Imaculada Conceicao, 80215-901, Curitiba, Parana, Brazil;
  - Email: matheus.dalmolinribeiro@gmail.com.
- **Ramon Gomes da Silva**
  - Affiliation: PhD Student at Industrial & Systems Engineering Graduate Program (PPGEPS), Pontifical Catholic University of Parana (PUCPR), 1155 Rua Imaculada Conceicao, 80215-901, Curitiba, Parana, Brazil;
  - Email: gomes.ramon@pucpr.edu.br.
- **Viviana Cocco Mariani**
  - Affiliation: Professor of Mechanical Engineering Graduate Program (PPGEM), Pontifical Catholic University of Parana (PUCPR), 1155 Rua Imaculada Conceicao, 80215-901, Curitiba, Parana, Brazil; Professor of Department of Electrical Engineering, Federal University of Parana (UFPR), 100, Avenida Coronel Francisco Heraclito dos Santos, 81530-000, Curitiba, Parana, Brazil;
  - Email: viviana.mariani@pucpr.br.
- **Leandro dos Santos Coelho**
  - Affiliation: Professor of Industrial & Systems Engineering Graduate Program (PPGEPS), Pontifical Catholic University of Parana (PUCPR), 1155 Rua Imaculada Conceicao, 80215-901, Curitiba, Parana, Brazil; Professor of Department of Electrical Engineering, Federal University of Parana (UFPR), 100, Avenida Coronel Francisco Heraclito dos Santos, 81530-000, Curitiba, Parana, Brazil;
  - Email: leandro.coelho@pucpr.br.