Call for Postdoctoral Fellowship

Description

Postdoctoral Fellowship within the Project FAPESP (2020/07200-9) "***Analyzing Complex Data Linked to COVID-19 to Support Decision Making and Prognosis***", linked to the FAPESP Thematic Project (2016/ 17078-0) "Mining, Indexing and Visualization of Big Data in the Systems Context Support for Clinical Decision - (MIVisBD) FAPESP "(http://gbdi.icmc.usp.br/project/MIVisBD/).

We are looking for talented and motivated researchers to explore and develop new methods and algorithms to be used in decision-making processes for medical diagnosis and patient prognosis in the context of COVID-19. These methods and algorithms will be instantiated in systems and applications that will be made available to the scientific community to support, quickly and accurately, the decision-making process. Candidates must hold a recent Ph.D. in Computer Science, Computer Engineering, Biomedical Engineering, Computational Physics or Health Sciences, with experience in building medical image databases, radiomic based biomarkers and deep learning methods.

Expected responsibilities of the Postdoctoral Fellow:

1) To develop theoretical modeling that allows organizing and correlating the data of patients with COVID-19, aiming to highlight common aspects and separation between cases;
2) The improvement of the radiomic approach focused on the scenarios presented by COVID-19, allowing its integration with other image analysis techniques, especially those based on deep learning;
3) To identify potential radiographic features associated with COVID-19 patterns and with current clinical and laboratory biomarkers for the infection, such as C-reactive protein, that can serve as quantitative markers for acute respiratory syndromes;
4) To develop predictive models, based on deep learning, with the quantitative markers identified for acute respiratory syndromes, which can infer the patient's clinical outcome and assist in making diagnostic, prognostic and therapeutic support decisions;
5) To evaluate and analyze the results obtained by the proposed methods by means of objective metrics, such as sensitivity, specificity, area under the ROC curve, F1-Score, accuracy and precision.

Required Knowledge, Skills, and Abilities:

1) Ph.D in Computer Science, Computer Engineering, Biomedical Engineering, Computational Physics or Health Sciences;
2) Knowledge in medical image databases, radiomic based biomarkers and deep learning methods are essential;
3) Proven ability for disseminating research results by writing manuscripts and giving academic presentations;
4) Candidates must be available to travel in order to disseminate results and communicate with other scientists;
5) Must be able to work closely and communicate effectively with research colleagues;
6) Fluency in English, both written and spoken.

Preferred Knowledge, Skills, and Abilities:

The candidate must be able to interact effectively with interdisciplinary scientists and technical staff, in addition to understanding, experience and enthusiastic attitude in databases of medical images, radiomic biomarkers and deep learning methods.

Main place to carry out the activities:

Heart Institute (InCor) – HC FMUSP
Biomedical Informatics Laboratory
Av. Dr. Eneas de Carvalho Aguiar, 44 – 2nd floor
CEP 05403-000 – São Paulo, SP, Brazil
https://www.incor.usp.br/sites/spdweb

Send your application and documents by email:

Applicants should send a message to: Prof. Dr. Marco Antonio Gutierrez (marco.gutierrez@incor.usp.br) with the subject "***Selection for postdoctoral fellowship: supplement to COVID-19 - Project MiVisBD***" attaching the following documents in PDF format:

1) A short CV: containing degrees, relevant publications, previous research projects enrolled and relevant information;
2) Two letters of recommendation;
3) A short statement of research interest and background for developing novel research in medical image databases, radiomic based biomarkers and deep learning methods.

This position is open to Brazilians and Foreigners. The selected candidate will receive FAPESP Postdoctoral Scholarship in the amount of R $ 7,373.10 per month and a Technical Reserve equivalent to 15% of the annual scholarship amount to meet unforeseen expenses and directly related to the research activity. The Postdoctoral Fellowship will have duration of 24 months. The complete rules on the scholarship are available at http://www.fapesp.br/270.