Le génie pour l'industrie

École de technologie supérieure
1100, rue Notre-Dame Ouest
Local A-2570
Montréal (Québec) Canada H3C 1K3

Département de génie électrique

September 12, 2022

OBJECT : Postdoc position at École de technologie supérieure (ÉTS) and Centre hospitalier universitaire (CHU) Sainte-Justine, Montréal, Canada

Project: Development of clinical decision support systems using computer vision and artificial intelligence

Description: Intensive care services are the ideal clinical research environment for artificial intelligence (AI) because they collect a lot of clinical data and are highly computerized environments. Data includes RGB-D and infrared videos, Electrical Impedance Tomography, vital signs, blood gas concentrations such as oxygen and carbon dioxide concentrations measured at regular intervals, and clinical notes in which doctors and nurses record their remarks, possible observations, actions and diagnoses. Critical care patients are also monitored visually or by video to assess, among other things, their motility, agitation and level of consciousness. All this information is gathered to assess the level of vital distress of the patient. Our objective is to help physicians make decisions based on all available data and their evolution over time. Our work allows the detection and quantification of life-threatening distress in children and the implementation of evidence-based medicine in intensive care units.

Environment: The postdoc fellow will have to interact with engineers, computer scientists and clinical researchers, and will evolve in an environment where engineering, data sciences and medicine coexist. Therefore, the candidate will have the opportunity to develop the required communication and multidisciplinary skills in order to apply AI-based computer vision methods to healthcare. The postdoc fellow will integrate a large and very active research team who has acquired and constructed a multimodal healthcare dataset dedicated to research.

Qualifications: We are looking for enthusiastic candidates with solid background in 3D Computer Vision and Artificial Intelligence. The applicant should have a strong research record. Applicants must also have the ability to work independently, while interacting with other researchers. Excellent programming as well as excellent writing and oral communication skills are required. Previous experience in the healthcare domain is a plus. The applicant should be willing to move to Montreal.

How to apply: Applicants should apply by submitting a Curriculum Vitae (including a list of all publications) with a motivation letter to Professor Rita Noumeir (rita.noumeir@etsmtl.ca). Candidates should arrange for 1-2 letters of recommendation to be emailed (ideally directly) to the same address or should provide the name of 1-2 persons that can be contacted for references.
Start Date: As soon as possible. **Duration:** 2 years.