**Postdoctoral Researcher and graduate student positions in medical robotics at the University of Alberta, Canada**

Motivated postdoctoral researchers and graduate students preferably with past experience in medical robotics and especially robot-assisted image-guided surgery/therapy and robot-assisted rehabilitation are invited to study at the University of Alberta, Canada. The research projects are highly multidisciplinary and aim to develop robotics technologies that allow clinicians (surgeons and therapists) to treat patients with high accuracy, efficiency, and reliability.

All research will be carried out in a collaboration setting between the Department of Electrical and Computer Engineering (Telerobotic and Biorobotic Systems Group), and the affiliated university hospitals. You will work in a multidisciplinary environment involving engineers, clinicians, scientists, hospitals, and healthcare companies. The degree-granting department for graduate students will be Electrical and Computer Engineering.

The research will require a strong theoretical background as well as hands-on experience in as many of the following areas as possible: robotics, electromechanical systems, system modelling and control, computer vision, medical image processing, tissue engineering, computer programming, human-machine interaction, and medical device design.

Project 1: This research project is funded by CIHR and NSERC and aims to develop robotics technologies that allow surgeons to treat breast cancer in women with high accuracy, efficiency, and reliability under ultrasound image guidance.

Project 2: This research project is funded by the Government of Alberta and aims to develop autonomous and semi-autonomous systems for healthcare delivery.  Semi-autonomous needle steering in soft tissue, implementation of semi-autonomy in surgery in dVRK, and semi-autonomy for post-disability and -injury rehabilitation are topics to be investigated.

Project 3: This research project is funded by NSERC and aims to develop high fidelity haptic interfaces that allow a user to experience believable and complex interaction with an environment in ways nearly indistinguishable from direct touch.

If you are interested in being considered, please email the following documents as soon as possible to mahdi.tavakoli@ualberta.ca: (1) a CV, (2) transcripts of previous university degrees, (3) representative publications in electronic format, and (4) the contact information of three individuals who can serve as references. Scholarship decisions will follow an interview during which detailed information regarding the research project will be provided. Successful candidates will have previous degrees in electrical/computer/mechanical/mechatronics engineering or computer science, good time management and writing skills, and the ability to work effectively with other researchers. Competitive salaries will be offered to successful candidates.

Regards,
Mahdi Tavakoli