# **Special Issue**

# Sensing and Imaging in Biomedical Robotics and Image-Guided Surgical Systems

## Message from the Guest Editors

Sensing and imaging technology are fueling the rapid advancement of biomedical robotics and image-guided interventional procedures. Medical imaging and robotics are combined in modern surgery to enhance the effectiveness of surgical interventions. These interventional procedures, referred to as image-guided robotic surgeries, involve sensing and imaging technology, forming the basis for the acquisition and interpretation of information about the patient and operating environment, aiming to provide intuitive visual representation and intelligent machine perception during operations. Navigation is an important aspect for surgical robots, localization and mapping. Surgical navigation is guided by a combination of instrument sensing, preoperatively image-constructed models and intraoperative imaging. With computational intelligence, sensing and imaging technology empower modern biomedical robots with visual and haptic perception to perform tasks alongside humans with varying degrees of autonomy or in a collaborative fashion. This Special Issue seeks to showcase state-of-the-art research papers related to sensing and imaging in the domain of image-guided robotic surgery system.

### **Guest Editors**

Prof. Dr. Etsuko Kobayashi Dr. Liangjing Yang Dr. Chng Chin Boon Dr. Binh P. Nguyen

# Deadline for manuscript submissions

closed (31 October 2024)



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# Message from the Editor-in-Chief

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### Editor-in-Chief

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