

Possible Projects List

1. Surgical Instrument for Robotic Open Microsurgery (Taylor, Olds, Richmon)
2. Robotic Suturing Study (Taylor, Olds, Richmon)
3. Imaging in vivo neurotransmitter modulation of brain network activity in real-time (Boctor)
4. Spectroscopic Photoacoustic Flow Measurement (Boctor)
5. Mobile-Based Blood Flow Analysis of Chronic Wound (Boctor)
6. Real-time Virtual Rigid Body Tracking (Boctor)
7. Portable ultrasound 3D scanning (Boctor)
8. RGB-D and X-ray Calibration for Camera Augmented Mobile C-arm (Fuerst, Navab)
9. Path planning for robotic intra-operative SPECT (Fuerst, Navab)
10. Tracking of Gamma Probe for da Vinci (Fuerst, Navab)
11. Ultrasound-based Visual Servoing (Fuerst, Navab)
12. Robotic Hip Bone Cutting With Real Time Motion Reflexes (Kazanzides, Hundt)
13. Error Correction for a Learning Health System in Radiotherapy (McNutt)
14. Image Processing for Video-CT Registration in Sinus Surgery (Reiter)
15. IRIS: Integrated Robotic Intraocular Snake (Iordachita, He, Gehlbach, Taylor)
16. Reconstruction of Light Position from Shape of Illumination (Taylor, Vagvolgyi)
17. Optimized Tissue Structure Modeling and Abnormality Detection (Kobilarov, Taylor, Chalasani)
18. Image-guided Cranioplasty (Armand, Gordon, Murphy)
19. Skull Base Surgery with a Dexterous Manipulator (Armand, Carey, Liu)
20. Smooth Extrapolation of Unknown Anatomy (Taylor, Grupp)
21. 2D/3D Patient-to-Atlas Registration (Taylor, Grupp)
22. Sensor Fusion of 6-DOF Tracking using EM and IMU with Metal Compensation (Kazanzides, Sen)
23. Force-Sensing Microneedle for Retinal Vein Cannulation (Gonenc, Iordachita)
24. MRI-compatible needle driver (Iordachita)
25. Real-time NLP on Clinical Documents (Sevinc)
26. PACSPulse Proactive IT Monitoring Tool (Sevinc)
27. Johns Hopkins Health-E App (Sevinc)
28. Real-time use of PICU Acuity tracking for Dynamic Clinical Allocation and Training (Sevinc)
29. Mosquito Dissection (Taylor)

