

MEDICAL ROBOTICS

This competency develops algorithmic and AI-based support tools for medical procedures using advanced robotic systems. Leveraging Hungary's only research-purpose da Vinci Surgical System, the team conducts RDI in surgical automation, skill assessment, decision support, and telesonography. As an active member of the global DVRK community, the activity advances Surgical Data Science through international collaboration and applied research.



ACHIEVEMENTS

- Hungary's only lab operating a da Vinci system with DVRK controllers.
- Development of a telesonography platform and autonomous skill-assessment methods.
- Internationally recognised publication record in medical robotics and Surgical Data Science.
- Active membership in the global DVRK research community (35+ academic centres).



INFRASTRUCTURE

- da Vinci Surgical System (research configuration).
- DVRK (Da Vinci Research Kit) controllers.
- KUKA LBR iiwa.
- IROB Robot Laboratory.



REFERENCES

- Surgical Data Science software for the da Vinci system (peer-reviewed).
- Autonomous surgical skill assessment research (peer-reviewed).
- Telesonography platform developed with Koellner Medical.
- Contributions to ISO TC299 and IEC TC62D standardisation with IEEE Standards Association and euRobotics.