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REICHERTZ INSTITUT  
FÜR MEDIZINISCHE  
INFORMATIK**



## Ringvorlesung Medizinische Informatik

### Ontologiebasierte Navigation und automatische Alarmierung in der Endoskopie

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**Der Vortrag wird auf Deutsch gehalten!**

Optical navigation systems help surgeons find their way through the complex anatomy of a patient. However, such systems are accident-sensitive, time-consuming and difficult to use because of their complicated technical requirements such as the setting of optical markers and their intraoperative registration. The BIOPASS project, therefore, provides an innovative localisation system for markerless navigation in endoscopic surgery to support medical decision making. This system comprises several machine learning classifiers to recognise anatomical structures visible in the endoscopic images.

To verify the data provided by these classifiers and to alert medical staff about surgical risk situations, we developed a new ontology-based software called OntoSun. Our software improves the precision and the sustainable traceability of the classifiers' results and also provides warning messages that increase situational awareness during surgical interventions.



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