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UNIVERSITÄT BERN

Seminar über Biomedizinische Photonik

Referent/in: Dr. Lucas Patty, CSH & ARTORG Centre, University of Bern

Titel: Mueller matrix polarimetry for deep-learning-based tumor segmentation

Pancreatic cancer, the third leading cause of cancer-related deaths, often requires complex surgery that relies on intraoperative diagnosis to assess resection margins. A common technique for this is frozen section, in which a biopsy sample is snap-frozen, sectioned, stained, and evaluated by a pathologist. The process, however, can take up to 30 minutes and is vulnerable to preparation artifacts that hinder accuracy. In this context, Mueller matrix polarimetry potentially provides an advantageous alternative. In this seminar I will outline ongoing research at the ARTORG institute using the combined approach of machine learning and polarimetry for the segmentation of fresh and frozen pancreatic tissue, pancreatic histopathology slides. I will also discuss our current efforts toward more generalized object-geometry reconstruction and material differentiation from polarimetric data, aiming for faster and reliable intraoperative margin assessment.

Zeit: Wednesday 5.11.2025, 10:15 Uhr

Ort: Room A97, ExWi, Sidlerstrasse 5, 3012 Bern