

AI-based Digital Pathology in Oncology and Cancer Screening

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Summary

Niels Grabe is newly recruited professor for data analysis and imaging-based diagnostics at the Institute of Pathology at the UMG. Pathology and radiology are key application fields of artificial intelligence (AI) in medicine. In this talk, applications of AI in cancer will be shown. Pathological diagnosis is defining the actual disease and is guiding key clinical decision based on microscopic tissue samples. The talk will initially show such guidance in immuno-oncology. As AI-based analysis is usually evaluated against human expert, the talk will then demonstrate at the example of gynecological cancer screening how alternatively endpoints from epidemiological studies can be used. This yields an objective gold-standard to compare human and AI-based analysis performance. Also, technical approaches to address challenges through sample variation and technical lab variations are presented. The talk will close with pointing to the necessity of broader, federated data collections and their relevance for training and validating AI.