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Mardi 30 juin 2026

11H00-12H00 – SALLE CHASSERAL, RTE DE LA CORNICHE 21 – 1010 LAUSANNE

«AI-assisted identification of primary tumors in Population-Based Cancer Registries. Experience from the RVT Dataflow»

SPEAKER

Tapio Niemi is a data scientist specialised in cancer registry data systems, applied artificial intelligence, and medical coding. He collaborates closely with IT and registry professionals to integrate AI tools extracting medical information from clinical reports into real-world coding workflows. He holds a PhD in Computer Science from the University of Tampere (2001). Before starting at Unisanté in 2020, he taught data management and analytics courses and participated several national and European R&D projects while working at CERN and HEC Lausanne.

ABSTRACT

Population-based cancer registries (PBCRs) rely on expert knowledge to code and consolidate cancer cases according to international standards. A key task is identifying new primary tumors from multiple clinical documents. At the Registre Vaudois des Tumeurs (RVT), approximately 150,000 documents are processed annually through a dataflow system that removes duplicates or negative reports and integrates administrative and diagnostic metadata. Free-text pathology reports remain essential for completing and validating structured data. We developed a CNN-based, noise-robust model to automatically extract key variables, including tumor site, morphology, laterality and behavior. Model performance shows strong results, with F1 micro-scores ranging from 0.79 to 0.98. Based on these predictions, primary tumors are detected using international coding rules and automatically uploaded into the registry. Final validation remains under expert supervision, ensuring both efficiency and data quality.

Recommandé par la Société Suisse des Spécialistes en prévention et santé publique (SPHD) pour la reconnaissance de la formation continue.
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