

AI decision-support ecosystem for oncology

Benefits

- Improved evidence-based therapy recommendation & treatment
- Reduction of potential errors and side effects
- Tumor board time savings & increased efficiency
- Higher patient satisfaction, quality of life and survival rates

Project Status

- Technology prototype developed & successfully tested on large number of datasets
- MVP for urological cancers, multicenter evaluation ongoing
- Broad explainability creates transparency, quality & trust

Patents & IP

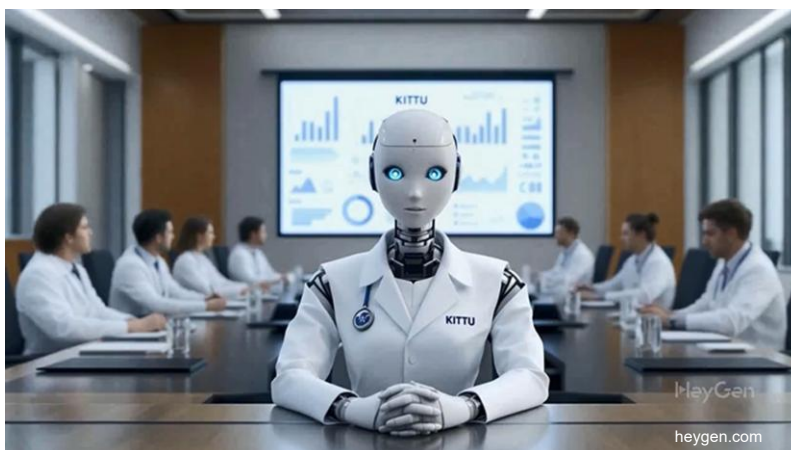
- European Priority Filing EP25155356.6 on 31-Jan-2025
- International Application PCT/EP2026/052446
- Comprehensive patient training data from all tumor stages

Offer

- The technology can be licensed or assigned
- Collaboration on further development & clinical partnership opportunity

Scientists from University Medical Center Mainz have developed a pioneering method for AI-based clinical decision support system specifically designed to optimize therapy recommendations in (urological) oncology tumor boards. Developed in collaboration with the German Research Center for Artificial Intelligence (DFKI), it already addresses a critical unmet need: approximately one quarter of all tumor diseases affect urogenital organs, and the complexity of available treatment options frequently exceeds what even experienced specialists can fully oversee.

The system is trained on a comprehensive patient database comprising hundreds of thousands of data records for the three most prevalent urological tumor entities, prostate cancer, urothelial carcinoma, and renal cell carcinoma. KITTU employs a novel two-stage AI process that mirrors actual tumor board decision-making: it first predicts the relevant therapy category (e.g., medication vs. surgery), then specifies the concrete treatment recommendation. Crucially, the system provides full explainability. An integrated dashboard visualizes which patient-specific factors had the greatest influence on the AI-generated recommendation, creating transparency and trust among clinicians. Additionally, evidence-based clinical study data can be integrated into the dashboard, making relevant trial information automatically available alongside individualized therapy suggestions.



Schematic representation: KITTU bot actively supports a tumor board

Retrospective validation demonstrates recommendation accuracy of over 70%, reaching up to 90% depending on the tumor entity and recommendation level. The follow-up prospective, multicenter clinical study is currently evaluating the system across multiple clinical sites.

The technology is one of the world's first explainable AI assistant for tumor therapy recommendations, currently validated in urological oncology - but this is only the starting point. The underlying AI architecture is inherently domain-agnostic: once trained on the relevant patient data, the system can be extended to virtually any tumor entity. KITTU is well positioned for regulatory certification as a Software as a Medical Device. Each expansion into a new oncological discipline – the patent application covers entire oncology – multiplies the addressable market, positioning KITTU as a comprehensive AI decision-support ecosystem for cancer care worldwide.

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