KU INFORMATION & TELECOMMUNICATION TECHNOLOGY CENTER
The University of Kansas

ITTC's mission is to advance knowledge and create innovative technologies in information systems, networking and communications, bioinformatics, and radar;

To education and train students for technology leadership;

To transfer knowledge and innovative technologies to Kansas companies and national industries;

By providing an excellent interdisciplinary research and development environment.

Additional ITTC technologies available for licensing are listed at:
www.ittc.ku.edu/techtransfer

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Office of Technology Commercialization

Title of Invention: Cephalometric Benchmark Tracing Using Deformable Templates

Technology ID: 11KU088L

Non-Confidential Description: Cephalometric x-rays show dental and skeletal relationships, which are needed to diagnose genetic malformations and sleep disorders and plan and evaluate orthodontic treatments. The variability of patients' cranial structures and image quality of cephalograms makes an accurate assessment an incredibly difficult, time-consuming task.

Current image processing and interpretation rely on rigid models and require abundant computational power. ITTC researchers have developed a robust algorithm that automatically detects and identifies anatomical landmarks on cephalometric X-ray images. This is the first software system that introduces deformable cephalometric templates, which allow segmenting, matching, and tracking of anatomical structures. They combine image data along with knowledge about the location, size, and shape of bony and soft-tissue landmarks.

Applications: The proposed system will be integrated with x-ray devices used by dentists, orthodonists, and otolaryngologists. It demonstrates promising detection results on both bony and soft-tissue landmarks. The ITTC-developed models will accommodate significant variability of biological structures and other factors.

Benefits: Its accuracy and efficiency are a significant improvement to current diagnostic tools in cephalometry. Better understanding of patients' airways and dental and skeletal features will provide more timely and accurate diagnosis and treatment plans.

Patent Status:

License: None

Confidential Disclosure Agreement: KU is willing to enter into a Confidential Disclosure Agreement for the purpose of negotiating a License Agreement. If you are interested in learning details of this invention, please contact:

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