Medical Image Categorization (Yissum)

code: 19-2006-160

Yoav Smith, HUJI, Faculty of Medicine

Classifying medical images for enhanced diagnoses

Categories	Data mining, Diagnostics, Imaging, Bioinformatics
Development Stage	Algorithm completed; in use for pathology and melanoma
Patent Status	US patent granted 6,631,204
Market Size	U.S. medical imaging software market estimated at $1.6 billion a year

Highlights

- Reviewing medical slides is a slow and labor-intensive process often resulting in delays in diagnosis and treatment onset
- This technology enables computerized screening of slides, characterization and diagnosis.

Our Innovation

- Libraries of digital histopathological images divided into categories according to pathology are established by skilled medical professionals based on current familiar categorization methods such as the Gleason grading of histology samples for prostatic cancer or the ABCD checklist for cutaneous melanoma. The computer compares points of similarity between test images and sets established for each category to provide a diagnosis based on the standard linear Karhunen-Lo?ve transform (KLT) method. Following initial categorization, similarity RMS_ERROR methods are used to continue the classification.

Key Features

- Enables medical professionals to have the final say in image categorization
- Measures points of similarity between a test image and images in a previously classified set
- Significantly reduces time needed to examine large numbers of slides
- Can be used for a variety of medical images including tissue samples, CT scans, PET scans, osteoporosis screening, thallium imaging, various cardiological tests and surgical applications

Development Milestones

- Algorithm complete; may be used in any content based image retrieval project once database is established
- The Opportunity
- Computer-aided detection software applications and related hardware represent the fastest-growing sector of a relatively mature market, growing at a rate of about 18-to-20 percent per annum.
- Frost & Sullivan estimates a market size of more than $100.7 million for Computer Aided Detection (CAD) alone in 2006. They also estimate that this new imaging market is growing by 11.5 percent per year and is expected to reach $155.6 million by the year 2010

Contact for more information:

Shoshana Keynan ✉, VP, Head of Business Development, Healthcare, +972-2-6586683

Yissum Research Development Company of the Hebrew University of Jerusalem
Hi-Tech Park, Edmond J. Safra Campus, Givat-Ram, Jerusalem P.O. Box 39135, Jerusalem 91390
Israel Telephone: 972-2-658-6688, Fax: 972-2-658-6689