

Joint Event on 2nd World Congress on
Infectious Diseases

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International Conference on

Pediatric Care & Pediatric Infectious Diseases

August 24-26, 2016 Philadelphia, USA



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Automated chest X-ray screening for the evidence of pulmonary abnormalities

The talk is aimed at presenting an automatic chest X-rays screening system to detect pulmonary abnormalities using chest X-rays (CXR) in non-hospital settings. In particular, the primary motivator of the project is the need for screening HIV+ populations in resource-constrained regions for the evidence of Tuberculosis (TB). The system analyzes thoracic edge map, shapes as well as symmetry that exists between the lung sections of the posteroanterior CXRs. In this study, we have used two CXR benchmark collections made available by the U.S. National Library of Medicine and have achieved a maximum abnormality detection accuracy of 88.67% and the corresponding area under the ROC curve of 0.95, which outperforms the reported state-of-the-art.

Biography

K C Santosh worked as a research fellow at the U.S. National Library of Medicine (NLM), National Institutes of Health (NIH). He worked as a postdoctoral research scientist at the LORIA research centre, Universite de Lorraine in direct collaboration with industrial partner ITESOFT, France, for 2 years. He also worked as a research scientist at the INRIA Nancy Grand Est research centre for 3 years, until 2011. K C Santosh has demonstrated expertise in pattern recognition, image processing, computer vision and machine learning with various applications in handwriting recognition, graphics recognition, document information content exploitation, medical image analysis and biometrics. He published more than 60 research articles, including a book section in encyclopedia of electrical and electronics engineering.

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