Lakshmi Dhevi Jayagobi

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Summary

Emerging professional with research experience and keen interest in image processing, computer vision and medical image analysis. Strong mathematical background, analytical and communication skills. Other interests include data mining and healthcare consultancy.

Education

Carnegie Mellon University, Pittsburgh, PA **2012 - 2013 (Expected)**
Master of Science (M.S.), Bioengineering and Biomedical Engineering (GPA - 3.81/4.00)

Anna University, Chennai, India **2008 - 2012**
Bachelor of Engineering (B.E.), Biomedical Engineering (GPA - 8.35/10.00)

Experience

Center for Bioimage Informatics, Carnegie Mellon University, Pittsburgh, PA **Aug 2012 - Present**
Graduate Research Assistant, May 2013 - Present
Graduate Research Student, Aug 2012 - April 2013

- *Exposure-based rejection of otitis media images*
  Extracted features, trained model and classified images as over or under exposed and correctly exposed images.

- *Classification of otitis media images using Random Forests*
  Implemented Random Forest classifier to classify the otitis media images into the classes - AOM, OME and NOE.

Mediscans, Ultrasound Scan and Research Center, Chennai, India **Oct 2011 - May 2012**
Research Student

- *Computer aided diagnosis of ultrasound fetal heart images (undergraduate thesis)*
  Automated the measurement of the ultrasound fetal cardiac physical parameters and subsequently compared it against the normogram to detect aberration.

- *Automated measure of the Nuchal Translucency (NT) in ultrasound fetal images*
  The purpose was to provide a pre-natal diagnosis report of NT to the doctor which will help them make a decision before proceeding to amniocentesis.

Chettinad Health City, Chennai, India **Oct 2011 - Oct 2011**
Trainee

  Was exposed to the various biomedical equipments in the department of radiology, clinical laboratory centre, intensive care unit and neonatal intensive care unit, dialysis centre, cardiology department, central sterile supply department, Physical Medicine and Rehabilitation (PMR) center and exposed to the role of a biomedical engineer in a hospital.

Sri Ramachandra Medical Centre, Chennai, India **Mar 2011 - Apr 2011**
Trainee

  Was exposed to the various hip and knee replacement surgical techniques

Relevant Courses

Master of Science (M.S.), Bioengineering and Biomedical Engineering

- Wavelets and multiresolution techniques
- Machine learning
- Engineering molecular cell biology
- Medical image analysis
- Computation methods in BME
- Bio-inspired robotics
- Cognitive video

Bachelor of Engineering (B.E.), Biomedical Engineering

- Pattern recognition and neural networks
- Medical imaging techniques
- Diagnostic and therapeutic equipment
- Digital image processing
- Medical informatics
- Radiological equipments
- Digital signal processing
- Biometric systems
- Transforms and partial differential equations
- Signals and systems
- Biomedical instrumentation
- Probability and random processes

Projects

Audio annotation of colonoscopy videos Jan 2013 - May 2013

- Annotated colonoscopy videos with the corresponding audio file.
- Retrieved specific frames (such as those with lesions) from the video, based on the merged audio; and presented them, as well as their time of occurrence; for further diagnosis.

Color and texture feature extraction for classification of otitis media images Sep 2012 - Dec 2012

- Classification method applied on otitis media images, focusing on feature extraction by using color and texture information.
- Investigated individual MPEG-7 descriptors and color texture features, as well as different combination of the descriptors, under the framework of a Multi-Resolution Classification (MRC).

Design of caterpillar inspired robotic endoscope with synthetic micro-fiber adhesion mechanism Aug 2012 - Dec 2012

- Proposed and analyzed the design of a novel miniaturized, modular caterpillar robot capable of traversing the ducts of intestines with the help of synthetic micro-fiber adhesion mechanism to perform endoscopy

Feature extraction for fingerprint recognition Jan 2011 - May 2011

- Extracted minutiae points (ridge endings and ridge bifurcations) from fingerprints which are potential features for fingerprint recognition.

Vowel recognition using formant analysis Jan 2011 - May 2011

- Implemented a model based on formant analysis in MATLAB to recognize the phonetic of the vowels in three or four letter words.

Skills & Expertise

Computer Skills	MATLAB, C, SimpleITK, LabView
Core Skills	Image processing, bioinformatics, medical imaging, medical image analysis, machine learning, digital signal processing, medical devices
Languages	English (Full professional proficiency)
	Telugu (Native or bilingual proficiency)
	Tamil (Full professional proficiency)
	Hindi (Limited working proficiency)

Honors and Awards

Carnegie Mellon BME Summer Research Award 2013
BME Department, Carnegie Mellon University, Pittsburgh, PA, USA

Merit Scholarship Award 2010
Shiv Nadar Foundation, Chennai, India

Scholarship Award 2007, 2008
Velammal Educational Trust, Chennai, India

Intra College Chess Champion 2008, 2010
SSN College of Engineering, Chennai, India

District Level Chess Champion 2004, 2005, 2006
Vellore District Chess Academy, Vellore, India