PREETI GOPAL

p.gopal@deakin.edu.au

Associate Research Fellow

Applied Artificial Intelligence Institute, Deakin University

RESEARCH INTERESTS

machine learning, medical image computing, signal processing and optimization

EDUCATION

IITB-Monash Research Academy *Defended: Jan 31, 2020*

Ph.D. in Computer Science & Engineering (IIT Bombay)

School of Physics and Astronomy (Monash University)

Overall Course GPA: 8.33/10

Indian Institute of Technology Bombay *June 2012*

M.Tech in Electrical Engineering

Communications and Signal Processing

Overall GPA: 8.7/10

Pondicherry Engineering College *June 2008*

B.Tech in Electronics and Communications Engineering

Overall GPA: 8.83/10

INDUSTRY EXPERIENCE

Healthcare Technology Innovation Centre Aug 2012 - June 2014

Project Engineer *IIT Madras Research Park, Chennai*

· Project in-charge for an industry collaborated project in ophthalmic image computing

· Developed and implemented algorithms for detection of anatomical and abnormal structures present in retinal images of the eye

· Acquired skills in image processing, statistical pattern recognition, graphical interface development, domain understanding in ophthalmic imaging and disease analysis

Robert Bosch Engineering and Business Solutions Ltd. July 2008 - July 2009

Associate Software Engineer *Coimbatore*

· Software development in C for parts of Electronic Control Units in medium weight vehicles

SKILLS

– **Languages:** C, Python, MATLAB

– **Packages:** OpenCV

– **Operating System:** Linux, Windows

MAJOR COURSES TAKEN

- **During Ph.D:** Algorithms and Complexity, Software Lab, Applied Linear Algebra, Math for Visual Computing, Linear Optimization, Medical Image Computing

- **Online:** Python Data Structures, Python for Machine Learning

- **During Masters:** Digital Signal Processing, Image Processing, Computer Vision, Adaptive Signal Processing, Computer Graphics, Statistical Signal Analysis

PUBLICATIONS

Journals

- Preeti Gopal, Sharat Chandran, Imants Svalbe and Ajit Rajwade, *Low radiation tomographic reconstruction with and without template information*, Signal Processing (Elsevier), 2020
- Preeti Gopal and Imants Svalbe, *Spatial domain morphological filtering for interpolation of the Fourier domain*, Pattern Recognition Letters, 2018
- A journal on few-views imaging is under review with IEEE Transactions on Computational Imaging.

Conferences

- Preeti Gopal, Ritwick Chaudhry, Sharat Chandran, Imants Svalbe and Ajit Rajwade, *Tomographic reconstruction using global statistical priors*, Digital Image Computing: Techniques and Applications (DICTA), 2017
- Preeti Gopal, David Bailey and Imants Svalbe, *Nonlinear Interpolation in the Fourier Domain Guided by Morphologic Filters*, Digital Image Computing: Techniques and Applications (DICTA), 2017
- Preeti Gopal, Sharat Chandran, Imants Svalbe and Ajit Rajwade, *Multi-slice tomographic reconstruction: to couple or not to couple*, Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2016
- Preeti Gopal, Ajit Rajwade, Sharat Chandran and Imants Svalbe, *A Comparison of Some Methods for Direct 2D Reconstruction from Discrete Projected Views*, Discrete Geometry for Computer Imagery (DGCI), 2016
- Sajith K, Preeti Gopal and Subhasis Chaudhuri, *Hand Tremor Analysis using Deformable Object Manipulation in a Haptic Environment*, IEEE Point-of-Care Healthcare Technologies (PHT), 2013

Conference abstracts

- Preeti Gopal, Sharat Chandran, Imants Svalbe and Ajit Rajwade, *Low Dose Tomography: Poisson-Gaussian Convolution-based Reconstruction*, an abstract, International Symposium on Biomedical Imaging (ISBI), 2019
- Preeti Gopal, Sharat Chandran, Imants Svalbe and Ajit Rajwade, *Tomography in Longitudinal Studies: Detecting New Structures from Sparse Measurements*, an abstract, International Symposium on Biomedical Imaging (ISBI), 2019

PATENT

- *Method and system for performing ophthalmic image analysis*: Niranjan Joshi, Keerthi Ram, Mohanasankar Sivaprakasam, **Preeti Gopal**, Vaanathi Sundaresan and Garima Gupta at Healthcare Technology Innovation Centre, IITM Research Park, Chennai, 2013