# KALASALINGAM
## ACADEMY OF RESEARCH AND EDUCATION
### (DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade

Anand Nagar, Krishnankoil - 626126, Srivilliputtur (via), Virudhunagar District, Tamilnadu.

# APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:21-05-2020

| Department | COMPUTER SCIENCE AND ENGINEERING | Application No. | 20200001 |
|---|---|---|---|
| Area of Research | IMAGE PROCESSING | Research Mode | PART TIME |

**Name** :PARVATHY JYOTHI

**Date of Birth / Age** :31-10-1984 / 35 Years

**Gender** :FEMALE

**Category** :OBC

**e-Mail ID** :parvathyjyothi@gmail.com

**Mobile** :9946167061

| Father's/Husband's Name | VIPIN P V | Father's/Husband's Occupation | BANK EMPLOYEE |
|---|---|---|---|
| **Family Income** | 300000 | **Residental Type** | URBAN |
| **Birth Place** | ERNAKULAM | **Mother Tongue** | MALAYALAM |
| **Religion** | HINDU | **Martial Status** | MARRIED |
| **Aadhaar No.** | 571800255991 | **PAN No.** | BGEPP6880J |
| **Physically Challenged** | NO | **Type of Disability** | - |

| Address for Communication: | Permenant Address: |
|---|---|
| FLAT NO 5A<br>MINOA HERITAGE<br>KAKKANAD<br>ERNAKULAM DISTRICT<br>KERALA<br>INDIA<br>Pin-682021 | FLAT NO 5A<br>MINOA HERITAGE<br>KAKKANAD<br>ERNAKULAM DISTRICT<br>KERALA<br>INDIA<br>Pin-682021 |

### Qualification

| Degree | Discipline | College/university | Year Passed | AVG/CGPA | Class | Mode |
|---|---|---|---|---|---|---|
| BTECH | IT | MG UNIVERSITY | 2006 | 67.9% | FIRST | REGULAR |
| MTECH | CSE | KERALA UNIVERSITY | 2009 | 76% | FIRST | REGULAR |

### Experience

| Organization | Designation | Experience From | Experience TO | Work Nature |
|---|---|---|---|---|
| SNGCE | ASSISTANT PROFESSOR | 2006-09-02 | 2019-09-28 | ACADEMIC SUPPORT AND GUIDANCE TO STUDENTS; PARTICIPATION IN DEPARTMENT ACTIVITIES |

### Payment Details

| Transaction ID | Reference | Date of transaction | Amount | Status |
|---|---|---|---|---|
| 20200001_200611095732 | SHMP8886282833 | 11-06-2020 | 600 | SUCCESS |

# MEDICAL IMAGE ENHANCEMENT BASED ON CNN-FBB MODEL

## ABSTRACT

Image enhancement aims to make certain image features more distinct and prominent. In certain MRI and CT images, contrast is very low so that it is difficult to distinguish lesion areas from normal tissue. In this paper, a new medical image enhancement model using Convolutional Neural Network (CNN) and Frequency Band Broadening (FBB) is introduced. The model is primarily divided into three parts- i) preprocessing image with curvelet transform and cycle spinning        ii) image enhancement with CNN and FBB iii) image fusion algorithm which follows pixel-level fusion.

Curvelet transform is a multiscale directional transform that can handle curves more effectively than wavelet transform. In the preprocessing stage, image data undergoes denoising methods using curvelet and a soft threshold function has been adopted combining with cycle spinning. The preprocessing stage is followed by image enhancement stage, where CNN and FBB models are used. The CNN model is designed as a structure with four layers of convolution, in which each layer has its own function. The weights as well as bias of each layer are learnt by back propagation algorithm. The main method of FBB involves compression of time domain signal such that it can expand the frequency band in frequency domain. The final stage is the fusion of two enhanced images obtained from the previous stage. The most basic fusion is the pixel-level fusion. After fusion, the image exhibits more detailed information such as edges and texture.

Submitted to                                                     Submitted by

Dr. G Murugaboopathi                                        Parvathy Jyothi

Professor                                                          parvathyjyothi@gmail.com

Dept.of Computer Science and Engg

Register No. &
Year

**58152**

**June 2006**

# Mahatma Gandhi University

## FACULTY OF ENGINEERING & TECHNOLOGY

*The Syndicate of the Mahatma Gandhi University*

*hereby makes known that*

**Parvathy Jyothi**

*has been admitted to the*

*Degree of Bachelor of Technology*

*under* **Information Technology** *Branch*

*he/she having been certified by duly appointed examiners*

*to be qualified to receive the same, and having been by them*

*placed in the* **First Class** *at the*

*examination held in* **June 2006**

*Given under the seal of the University.*

University Buildings
Kottayam - 686 560
Kerala, S. India

Dated **24 December 2007**

*Vice-Chancellor*

# UNIVERSITY OF KERALA

कर्मणि व्यज्यते प्रज्ञा

കേരള സർവകലാശാല

## FACULTY OF APPLIED SCIENCES

The Senate of the University of Kerala hereby makes known that **Parvathy Jyothi** has been admitted to the Degree of Master of Technology, she having been certified by duly appointed examiners to be qualified to receive the same and having been by them placed in the **First** Class **with Distinction** in Branch **Computer Science** at the examination held in the year **2009** .

Given under the seal of the University

University Buildings

Thiruvananthapuram   July 14, 2010

Vice Chancellor

Section : EI-XVII

Register No: 58152

KOTTAYAM,

Dated 12 SEP 2006

## MEMORANDUM

The following marks were awarded to Shri / Smt. Parvathy Jyothi

at the Eighth Semester (Final) B. Tech. Degree Examination held in June 2006

Branch : Information Technology

| SUBJECT | | Marks awarded | | Minimum marks required for a pass | | Maximum marks |
|---|---|---|---|---|---|---|
| | | | | Complete pass | Pass in individual subject | |
| A. Security in Computing | Written | 51 | | 40 | 40 | 100 |
| | Sessional | 45 | | — | — | 50 |
| | Total | | 96 | — | 75 | 150 |
| B. Information System and Management | Written | 59 | | 40 | 40 | 100 |
| | Sessional | 39 | | — | — | 50 |
| | Total | | 98 | — | 75 | 150 |
| C. E-commerce | Written | 63 | | 40 | 40 | 100 |
| | Sessional | 43 | | — | — | 50 |
| | Total | | 106 | — | 75 | 150 |
| D. Artificial Intelligence | Written | 65 | | 40 | 40 | 100 |
| | Sessional | 42 | | — | — | 50 |
| | Total | | 107 | — | 75 | 150 |
| E. Elective – II Distributed Computing. | Written | 67 | | 40 | 40 | 100 |
| | Sessional | 40 | | — | — | 50 |
| | Total | | 107 | — | 75 | 150 |
| F. Elective – III Neural Networks | Written | 70 | | 40 | 40 | 100 |
| | Sessional | 42 | | — | — | 50 |
| | Total | | 112 | — | 75 | 150 |
| G. Internet Lab | Practical | 43 | | 40 | 40 | 100 |
| | Sessional | 37 | | — | — | 50 |
| | Total | | 80 | — | 75 | 150 |
| H. Project and Seminar | Sessional | | 90 | — | — | 100 |
| I. Viva – Voce | | | 30 | 20 | 25 | 50 |
| | Grand Total | | 826 | 600 | — | 1200 |
| Carry over marks of I & II to VII Semesters | | 5084 | | | | 7500 |
| Aggregate | | 5910 | | | | 8700 |
| Aggregate in words | | Five Nine One Zero | | | | |

Pass Minimum: Complete Pass: 40% of Written/Practical for each subject and 50% of overall aggregate.
Pass in Individual Subject: 40% of Written/Practical and 50% of the total of each subject.

Marks entered by : MP

Marks checked by : Jomy

Section Officer :

Asst. Registrar

# UNIVERSITY OF KERALA

## M. TECH. DEGREE PROGRAMME (CREDIT AND SEMESTER SYSTEM)

### RESULT SHEET

| | | |
|---|---|---|
| Name of Student | **PARVATHY JYOTHI** | Department **Computer Science** |
| | | Branch of Study **Computer Science with specialization in Digital Image Computing** |
| Admission Number | **COS 070616** | |
| Period of Study | **2007-2009** | Month/Year of Passing **September 2009** |

| Semester No. | Course Number | Course Title | Credits | Marks | Grade | Grade Point |
|---|---|---|---|---|---|---|
| I | COS 611 | MATHEMATICAL FOUNDATIONS OF IMAGE PROCESSING | 4 | 75 | A | 3 |
| I | COS 612 | NEURAL NETWORKS AND FUZZY SYSTEMS | 4 | 63 | B | 2 |
| I | COS 613 | ADVANCED COMPUTER GRAPHICS | 4 | 80 | A | 3 |
| I | COS 614 | ENGINEERING APPROACH TO COMPUTER NETWORKING | 4 | 83 | A | 3 |
| I | COS 615 | LABORATORY – I | 2 | 93 | E | 4 |
| I | COS 616 | SEMINAR | 1 | 83 | A | 3 |
| I | COS 6011 | EMBEDDED SYSTEM (ELECTIVE) | 3 | 83 | A | 3 |
| II | COS 621 | APPLICATIONS OF IMAGE PROCESSING | 4 | 76 | A | 3 |
| II | COS 622 | SOFTWARE ENGINEERING | 4 | 82 | A | 3 |
| II | COS 623 | DATA COMPRESSION | 4 | 85 | A | 3 |
| II | COS 624 | KNOWLEDGE BASED SYSTEMS | 4 | 84 | A | 3 |
| II | COS 625 | LABORATORY – II | 2 | 80 | A | 3 |
| II | COS 626 | SEMINAR | 1 | 90 | E | 4 |
| II | COS 603 | IMAGE PROCESSING APPLICATIONS IN GEOGRAPHIC INFORMATION SYSTEMS (ELECTIVE) | 3 | 86 | A | 3 |
| III | COS 631 | NEGOTIATED STUDIES | 3 | 83 | A | 3 |
| III | COS 632 | INDUSTRIAL TRAINING | 1 | 84 | A | 3 |
| III | COS 633 | DISSERTATION (PART I) | 4 | 91 | E | 4 |
| IV | COS 641 | DISSERTATION | 20 | 80 | A | 3 |

# DEPARTMENT OF COMPUTER SCIENCE

## UNIVERSITY OF KERALA

Book No. **2**

Serial No. **33**

## TRANSFER CERTIFICATE

Admission No .....COS0706-16

Name of Student ........... PARVATHY JYOTHI

Date of birth as entered
in the Admission Register

In figures ..... 31-10-1984

In words Thirty first October Nineteen Eighty four.

Admitted on 23-08-2007 Course... M. Tech (Computer Science)

Left on.... September, 2009.

Whether presented for the
University Examination ..................... yes

Whether all dues to the Department
have been paid........................... yes

Thiruvananthapuram,

Dated 27-05-2020.

Dr. D. MUHAMMAD NOORUL MUBARAK
HEAD OF THE DEPARTMENT
Department of Computer Science
University of Kerala, Kariavattom
Thiruvananthapuram - 695 581

SNGCE/AD/B-3/FL025/2018/63            09/04/2019

## EXPERIENCE CERTIFICATE

This is to certify that **Ms. Parvathy Jyothi** has been working in this college as **Assistant Professor in the Department of Computer Science & Engineering** from 02/09/2006 onwards and she is continuing as such.

She bears a good character and conduct.

09.04.19

(Dr. Kemthose P. Paul)
**PRINCIPAL**

आयकर विभाग
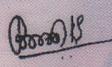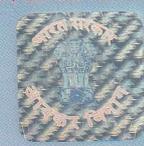INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

PARVATHY JYOTHI

JYOTHI

31/10/1984

Permanent Account Number
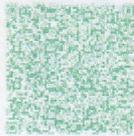BGEPP6880J

Signature

21042010

Self attested

Parvathy Jyothi

Parvathy Jyothi
Date of Birth/DOB: 31/10/1984
Female/ FEMALE

5718 0025 5991

मेरा आधार, मेरी पहचान

**Address:**
W/O Vipin P V, Flat No.5A, Minoa
Heritage, Manath Road, Kakkanad,
Thrikkakkara P O, Thrikkakara
North (Part), Ernakulam,
Kerala - 682021

5718 0025 5991

help@uidai.gov.in      www.uidai.gov.in

self attested

Parvathy Jyothi

No: 2253/18

# FORM OF NON–CREAMY LAYER CERTIFICATE

FORM OF CERTIFICATE TO BE PRODUCTED BY OTHER BACKWARD CLASSES

APPLYING FOR APPOINTMENT TO POSTS UNDER GOVERNMENT OF KERALA AND

ITS ORGANISATIONS AND INSTITUTIONS

This is to certify that Sri./Smt. PARVATHY JYOTHI

Son/daughter of K.K. JYOTHI, FLAT NO. 5A, MINOA HERITAGE, N.G.O QUARTERS, PIN-682021

VAZHAKKALA of village

ERNAKURAM District/Division in the State of

Kerala belong to HINDU - EZHAVA community,

which is designated as a Backward Class in the State of Kerala.

This is also certify that the above Shri./Smt. PARVATHY JYOTHI

does not belong to the category of 'Creamy Layer' in the light of the guidelines

issued in G.O(P)81/2009/SCSTDD dated 26.9.2009 and the scheduled prescribed

there under to identify the 'Creamy Layer' among the designated "Other Backward

Classes" in the State of Kerala.

Dated 28/07/2018          Issuing Authority 28/07/18

D. SUDARSANA BAI
VILLAGE OFFICER
VAZHAKKALA

VILLAGE OFFICE
(Seal)
VAZHAKKALA

## ANNEXURE-I

## CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./Ms./Mrs. PARVATHY JYOTHI is

employed as TRAINEE DATA ENGINEER (Designation) in the

RESEARCH & DEVELOPMENT (Department/Division Name)

of AMVION LABS Pvt. LTD

(Institution/Industry Name).

We have no objection in forwarding his/her application for the Ph.D. Research Programme.

### FOR FULL TIME:

The candidate will be sanctioned leave for the duration of the research programme and will be relieved from duty from _____ to _____ to undertake the full time research work in the University.

### FOR PART TIME:

The candidate will be permitted to undertake part time study in the University/College and will be allowed to be present for discussions with the supervisor, attending course works, conduct of experiments and participations in seminars and related presentations. Further the required facilities at our organization will also be provided to the candidate for doing research.

Date: 05.06.2020

Signature of the Head of Organization with office seal