CENTRAL UNIVERSITY OF KERALA
केरल केन्द्रीय विश्वविद्यालय

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES

Si: No:	Name Of Student	Register Number	Year of Admission	Title Of Thesis	Guide	Type Of Work	Place Of Work
1	Akhil Vinayak P	PCS051901	2019	A Survey On Human Activity Recognition Using Sensor Data	Dr. Thasleema T M	Research	Central University Of Kerala
2	Akshara Krishna P	PCS051902	2019	A Survey On Vehicle Detection From Images	Dr. Thasleema T M	Research	Central University Of Kerala
3	Akshaya K	PCS051903	2019	A Survey On Retinal Disease Detection Related Macular Degeneration	Dr. Thasleema T M	Research	Central University Of Kerala
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7	Anu Sebastian	PCS051907	2019	A Survey On Classification Of Brain Tumour Images	Dr. Thasleema T M	Research	Central University Of Kerala
8	Aswini P R	PCS051908	2019	A Survey On Detection And Classification Of Fruits	Dr. Thasleema T M	Research	Central University Of Kerala
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A SURVEY ON HUMAN ACTIVITY RECOGNITION USING SENSOR DATA

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

AKHIL VINAYAK P

Register No: PCS051901

UNDER THE GUIDANCE OF

Dr.THASLEEMA T.M

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES, CENTRAL UNIVERSITY OF KERALA, TEJASWINI HILLS PERIYE, KASARAGOD - 671316, KERALA, INDIA APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"A SURVEY ON HUMAN ACTIVITY RECOGNITION USING SENSOR DATA"** submitted by **AKHIL VINAYAK P (REG. NO: PCS051901)** in partial fulfilment of the requirements for the award of M.Sc. in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree

DATE: 29 April 2021

Dr. Thasleema TM
Assistant Professor
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DECLARATION

I, AKHIL VINAYAK P, Reg No: **PCS051901,** student of Fourth Semester M.Sc. Computer Science, Central University of Kerala, do hereby declare that the report entitled," **A SURVEY ON HUMAN ACTIVITY RECOGNITION USING SENSOR DATA**", submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30-04-2021

PLACE: Kannur

AKHIL VINAYAK P

PCS051901

A SURVEY ON VEHICLE DETECTION FROM IMAGES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"A SURVEY ON VEHICLE DETECTION FROM IMAGES"** submitted by **AKSHARA KRISHNA P (REG. NO: PCS051902)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 29 April 2021

Dr. THASLEEMA T M.
Assistant Professor
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DECLARATION

KSHARA KRISHNA P, Reg No: PCS051902, student of Fourth Semester M.Sc Com-
er Science, Central University of Kerala, do hereby declare that the report entitled, " **A**
RVEY ON VEHICLE DETECTION FROM IMAGES",submitted to the Department
Computer Science is an original record of studies and bonafide work carried out by me
n December 2020 to April 2021.

TE:03/05/2021

CE: Periye

AKSHARA KRISHNA P

PCS051902

A SURVEY ON RETINAL DISEASE DETECTION:AGE RELATED MACULAR DEGENERATION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

AKSHAYA K

Register No: PCS051903

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APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"A SURVEY ON RETINAL DISEASE DETECTION:AGE RELATED MACULAR DEGENERATION"** submitted by **AKSHAYA K (REG. NO: PCS051903)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 28 April 2021

Dr. THASLEEMA T M.
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Department of Computer Science
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DECLARATION

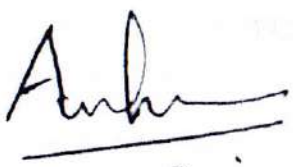
AKSHAYA K, Reg No: PCS051903, student of Fourth Semester M.Sc Computer Sci-
ce, Central University of Kerala, do hereby declare that the report entitled, **"A SURVEY**
N RETINAL DISEASE DETECTION:AGE RELATED MACULAR DEGENERA-
ON",submitted to the Department of Computer Science is an original record of studies
l bonafide work carried out by me from December 2020 to April 2021.

TE:.28/04/2021

ACE: Periye

AKSHAYA K

PCS051903



LOW-LIGHT IMAGE ENHANCEMENT METHODS

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

ALBIN JOSE

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APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **" LOW-LIGHT IMAGE ENHANCEMENT METHODS"** submitted by **ALBIN JOSE (REG. NO: PCS051904)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 28 April 2021

Dr. T.M. THASLEEMA
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DECLARATION

ALBIN JOSE, Reg No: PCS051904, student of Fourth Semester M.Sc Computer Science, entral University of Kerala, do hereby declare that the report entitled, **"LOW-LIGHT MAGE ENHANCEMENT METHODS"**,submitted to the Department of Computer Sci- nce is an original record of studies and bonafide work carried out by me from December 020 to April 2021.

DATE:30/04/2021

LACE: Kasaragod

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PCS051904

WATER POLUTION DETECTION SYSTEM

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

AMALRAJ P V
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APRIL 2021

Department of Computer Science, Central University of Kerala Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"WATER POLUTION DETECTION SYSTEM"** submitted by **AMALRAJ P V (REG. NO: PCS051905)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree

DATE: 29 April 2021

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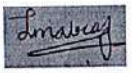
DECLARATION

I,AMALRAJ ,Reg No:PCS051905 ,Student of Fourth Semester M.sc Computer Scienc , Central University Of Kerala, do hereby declare that the report entitles,"WATER POLUTION DETECTION SYSTEM" , Submitted to the Department Of Computer Science,Central university Of Kerala is an orginal record of studies and bonafide word carried out by me from December 2020 to April 2021.



DATE:30-04-2021

PLACE: Kannur

AMALRAJ P V

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REAL-TIME OBJECT DETECTION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
M.Sc COMPUTER SCIENCE

ANJALY P G
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MAY 2021

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CERTIFICATE

This is to certify that the report entitled, **"REAL-TIME OBJECT DETECTION"** submitted by **ANJALY P G (REG. NO: PCS051906)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 29 April 2021

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DECLARATION

I, ANJALY P G, Reg No: PCS051906, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"REAL-TIME OBJECT DETECTION"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:03/05/2020

PLACE: Periye

ANJALY P G

PCS051906

A SURVEY ON CLASSIFICATION OF BRAIN TUMOR IMAGES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

ANU SEBASTIAN

Register No: PCS051907

UNDER THE GUIDANCE OF

Dr.THASLEEMA T M .

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"A SURVEY ON CLASSIFICATION OF BRAIN TUMOR IMAGES"** submitted by **ANU SEBASTIAN (REG. NO: PCS051907)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE :28/04/2021

Dr.THASLEEMA T M .
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

, ANU SEBASTIAN, Reg No: PCS051907, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"A SURVEY ON CLASSIFICATION OF BRAIN TUMOR IMAGES "**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from January 2020 to April 2021.

DATE:28/04/2021

PLACE: Chittarikkal

ANU SEBASTIAN

PCS051907

A SURVEY ON DETECTION AND CLASSIFICATION OF FRUITS

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

ASWINI P R

Register No: PCS051908

UNDER THE GUIDANCE OF

Dr. THASLEEMA T.M

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"A SURVEY ON DETECTION AND CLASSIFICATION OF FRUITS "** submitted by **ASWINI P R (REG. NO: PCS051908)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 29 April 2021

Dr. THASLEEMA T M
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, ASWINI P R, Reg No: PCS051908, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"A SURVEY ON DETECTION AND CLASSIFICATION OF FRUITS "**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: PERIYE

ASWINI P R

PCS051908

COLOR BALANCE AND FUSION FOR UNDERWATER IMAGE ENHANCEMENT

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

AYSHATH RAMSEENA CA

Register No: PCS051909

UNDER THE GUIDANCE OF

Dr. THASLEEMA TM.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"COLOR BALANCE AND FUSION FOR UNDERWATER IMAGE ENHANCEMENT"** submitted by **AYSHATH RAMSEENA CA (REG. NO: PCS051909)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 29 April 2021

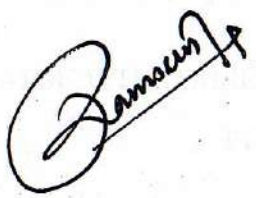
Dr. THASLEEMA TM.
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, AYSHATH RAMSEENA CA, Reg No: PCS051909, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"COLOR BALANCE AND FUSION FOR UNDERWATER IMAGE ENHANCEMENT"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021 **AYSHATH RAMSEENA CA**

PLACE: Periye **PCS051909**



Football Match Prediction Using Machine Learning Techniques

A Thesis submitted in partial fulfillment
of the requirements for the degree of

M Sc COMPUTER SCIENCE

GIRIL

REGISTER NUMBER: PCS051910

UNDER THE GUIDANCE OF

Dr.Kumar V

Department of Computer Science
School of Physical Sciences
Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, "Football Match Prediction Using Machine Learning Techniques " submitted by GIRIL (REG. NO: PCS051910) in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University/Institute for the award of any degree.

DATE: 28.04.2021

Dr.Kumar V
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I,GIRIL, Roll No : PCS051910, student of Fourth Semester M Sc. Computer Science, Central University of Kerala, do hereby declare that the report entitled "Football Match Prediction Using Machine Learning Techniques " submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2019 to April 2020.

DATE: 28·04-2021

PLACE: PERIYE

GIRIL

PCS051910

FEATURE SELECTION FUSION FOR CANCER DETECTION BASED ON MICROARRAY DATA CLASSIFICATION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

Gokul Krishna E

Register No: PCS051911

UNDER THE GUIDANCE OF

Dr. V. Kumar

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES, CENTRAL UNIVERSITY OF KERALA, TEJASWINI HILLS PERIYE, KASARAGOD - 671316, KERALA, INDIA APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **FEATURE SELECTION FUSION FOR CANCER DETECTION BASED ON MICROARRAY DATA CLASSIFICATION** submitted by **GOKUL KRISHNA E (REG. NO: PCS051911)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree

DATE:

Dr. V. Kumar
Assistant Professor
Department of Computer Science
Central University of Kerala

ACKNOWLEDGEMENT

The satisfaction that accompanies the successful completion of any task would be incomplete without introducing the people who made it possible and whose constant guidance and encouragement crowns all efforts with success.

I would like to show my greatest appreciation to my guide Dr.V. Kumar, Assistant Professor, Department of Computer science,Central university of kerala . I cannot say thank you enough for his tremendous support and help.I feel motivated and encouraged every-time I attend his meeting. Without his encouragement and guidance this project would not have materialized.

I am also grateful to my all other faculties in the Department, for providing excellent computing facility and nice atmosphere for completing my project successfully.

I would also like to express my deepest gratitude to my friends and family members for their motivation, emotional support and guidance at various stages of my project.

GOKUL KRISHNA E
PCS051911

WHITE BLOOD CELLS CLASSIFICATION AND COUNTING IN MICROSCOPIC BLOOD SMEAR

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

KEERTHI D

Reg.No: PCS051912

UNDER THE GUIDANCE OF

Dr. V KUMAR.

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671316,

APRIL 2020

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"WHITE BLOOD CELLS CLASSIFICATION AND COUNTING IN MICROSCOPIC BLOOD SMEAR "** submitted by **KEERTHI D (REG. NO: PCS051912)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE :

Dr.V.KUMAR
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

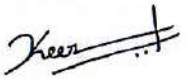
I, KEERTHI D, Reg No: PCS051912, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"WHITE BLOOD CELLS CLASSIFICATION AND COUNTING IN MICROSCOPIC BLOOD SMEAR"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:

PLACE:Periya

KEERTHI D

PCS051912



Automatic Cardiac Arrhythmia Classification Using Combination of Deep Residual Network and Bidirectional LSTM

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

KHADEEJATH NOUFEERA

Register No: PCS051913

UNDER THE GUIDANCE OF

Dr. KUMAR V.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **" Automatic Cardiac Arrhythmia Classification Using Combination of Deep Residual Network and Bidirectional LSTM"** submitted by **KHADEEJATH NOUFEERA(REG. NO: PCS051913)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE :

Dr.KUMAR V.
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, KHADEEJATH NOUFEERA, Reg No: PCS051913, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"Cardiac Arrhythmia Classification Using Combination of Deep Residual Network and Bidirectional LSTM"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:

PLACE:

KHADEEJATH NOUFEERA

PCS051913

TIME SERIES REPRESENTATION AND CLUSTERING APPROACHES FOR SHARING BIKE USAGE MINING

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

KUNE PRAVEEN KUMAR

Register No: PCS051914

UNDER THE GUIDANCE OF

Dr. V KUMAR

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2020

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"TIME SERIES REPRESENTATION AND CLUSTERING APPROACHES FOR SHARING BIKE USAGE MINING"** submitted by **KUNE PRAVEEN KUMAR (REG. NO: PCS051914)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 28.04.2021

Dr. V KUMAR .
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, KUNE PRAVEEN KUMAR, Reg No: PCS051914, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"TIME SERIES REPRESENTATION AND CLUSTERING APPROACHES FOR SHARING BIKE USAGE MINING"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 28.04.2021

PLACE: Periye

KUNE PRAVEEN KUMAR

PCS051914

A FAST AND ACCURATE SIMILARITY MEASURE FOR LONG TIME SERIES CLASSIFICATION BASED ON LOCAL EXTREMA AND DYNAMIC TIME WARPING

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

LAJISHA MP

Register No: PCS051915

UNDER THE GUIDANCE OF

Dr. KUMAR V

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **" A FAST AND ACCURATE SIMILARITY MEASURE FOR LONG TIME SERIES CLASSIFICATION BASED ON LOCAL EXTREMA AND DYNAMIC TIME WARPING "** submitted by **LAJISHA MP (REG. NO: PCS051915)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance.

To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 28.04.2021

Dr. KUMAR V.
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

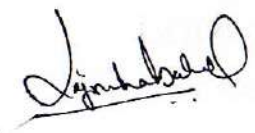
I, LAJISHA MP, Reg No: PCS051915, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"A FAST AND ACCURATE SIMILARITY MEASURE FOR LONG TIME SERIES CLASSIFICATION BASED ON LOCAL EXTREMA AND DYNAMIC TIME WARPING"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:30/04/2021

PLACE: Periye

LAJISHA MP

PCS051915



UNIVARIATE TIME SERIES CLASSIFICATION USING DISCRETE WAVELET TRANSFORMATION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

Leo Vattoly

Register No: PCS051916

UNDER THE GUIDANCE OF

Dr. V. Kumar

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671316,
APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"UNIVARIATE TIME SERIES CLASSIFICATION USING DISCRETE WAVELET TRANSFORMATION"** submitted by **LEO VATTOLY (REG. NO: PCS051916)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree

DATE:

Dr. V. Kumar
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, LEO VATTOLY, Reg No:**PCS051916** , student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"UNIVARIATE TIME SERIES CLASSIFICATION USING DISCRETEWAVELETTRANSFORMATION"**, submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30-04-2021

PLACE: Thrissur

Leo Vattoly

PCS051916

STRESS EVENTS DETECTION OF DRIVER BY WEARABLE GLOVE SYSTEM

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

MEGHANA A

Register No: PCS051917

UNDER THE GUIDANCE OF

Dr. KUMAR V.

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

MAY 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"STRESS EVENTS DETECTION OF DRIVER BY WEARABLE GLOVE SYSTEM"** submitted by **MEGHANA A (REG. NO: PCS051917)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 28.04.2021

Dr. KUMAR V.
Associate Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, MEGHANA A, Reg No: PCS051917, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"STESS EVENTS DETECTION OF DRIVER BY WEARABLE GLOVE SYSTEM"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to APRIL 2021.

DATE:28/04/2021

PLACE:PERIYA

MEGHANA A

PCS051917

Apple Detection in Natural Environment Using Deep Learning Algorithms

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

Muhammed Riyas A

Register No: PCS051918

UNDER THE GUIDANCE OF

Dr. V. Kumar

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671316,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"APPLE DETECTION IN NATURAL ENVIRONMENT USING DEEP LEARNING ALGORITHMS"** submitted by **MUHAMMED RIYAS A (REG. NO: PCS051918)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree

DATE:

Dr. V. Kumar
Assistant Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, MUHAMMED RIYAS A , Reg No:**PCS051918** , student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"APPLE DETECTION IN NATURAL ENVIORNMENT USING DEEP LEARNING ALGORITHMS"**, submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30-04-2021

PLACE: Mannarkkad

Muhammed Riyas

PCS051918

PHISHING ALARM-ROBUST AND EFFICIENT PHISHING DETECTION VIA PAGE COMPONENT SIMILARITY

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

MUSHRIFA BACKER P.A

Register No: PCS051919

UNDER THE GUIDANCE OF

Dr. MANOHAR NAIK S.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,
APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"PHISHING-ALARM:ROBUST AND EFFICIENT PHISHING DETECTION VIA PAGE COMPONENT SIMILARITY"** submitted by **MUSHRIFA BACKER P.A (REG. NO: PCS051919)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

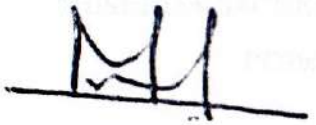
I, MUSHRIFA BACKER P.A, Reg No: PCS051919, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"PHISHING-ALARM:ROBUST AND EFFICIENT PHISHING DETECTION VIA PAGE COMPONENT SIMILARITY"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:

PLACE:

MUSHRIFA BACKER P.A

PCS051919



A DETECTION AND CLASSIFICATION SYSTEM FOR GENERIC DISEASES OF TOMATO GREENHOUSE PLANTS

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

NAVYASREE K S

Register No: PCS051921

UNDER THE GUIDANCE OF

Dr. MANOHAR NAIK

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"A DETECTION CLASSIFICATION SYSTEM FOR GENERIC DISEASES OF TOMATO GREENHOUSE PLANTS"** submitted by **NAVYASREE K S (REG. NO: PCS051921)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by she under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

I, NAVYASREE K S, Reg No: PCS051921, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"A DETECTION AND CLASSIFICATION SYSTEM FOR GENERIC DISEASES OF TOMATO GREENHOUSE PLANTS"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: Periye

NAVYASREE K S

PCS051921

JAMMING DETECTION USING TIMESTAMP FOR CLUSTER BASED WIRELESS SENSOR NETWORKS

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

P.DHARMA TEJA

Register No: PCS051922

UNDER THE GUIDANCE OF

Dr.MANOHAR NAIK

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled,**"JAMMING DETECTION USING TIME-STAMP FOR CLUSTER BASED WIRELESS SENSOR NETWORKS"** submitted by **P.DHARMA TEJA (REG.NO: PCS051922)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

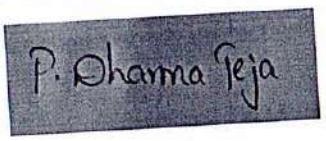
I, P.DHARMA TEJA, Reg No: PCS051922, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"JAMMING DETECTION USING TIMESTAMP FOR CLUSTER BASED WIRELESS SENSOR NETWORKS"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:

PLACE:

P.DHARMA TEJA

PCS051922



HYBRID EFFICIENT MODEL FOR ANOMALY BASED INTRUSION DETECTION SYSTEM THROUGH FEATURE SELECTION ANALYSIS

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

PRIYA DEVI P

Register No: PCS051923

UNDER THE GUIDANCE OF

Dr. Manohar Naik S

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671316,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"HYBRID EFFICIENT MODEL FOR ANOMALY-BASED INTRUSION DETECTION SYSTEM THROUGH FEATURE SELECTION ANALYSIS"** submitted by **PRIYA DEVI P (REG. NO: PCS051923)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

I, PRIYA DEVI P, Reg No:**PCS051923** , student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"HYBRID EFFICIENT MODEL FOR ANOMALY-BASED INTRUSION DETECTION SYSTEM THROUGH FEATURE SELECTION ANALYSIS"**, submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30-04-2021

PLACE: KOZHIKODE

PRIYA DEVI P

PCS051923

AN EFFICIENT DDOS ATTACK DETECTION MODEL FOR SDN

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

VAISHALI RAVI

Register No: PCS051924

UNDER THE GUIDANCE OF

Dr. MANOHAR NAIK S.

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"AN EFFICIENT DDOS ATTACK DETECTION MODEL FOR SDN"** submitted by **VAISHALI RAVI (REG. NO: PCS051924)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

I, VAISHALI RAVI, Reg No: PCS051924, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"AN EFFICIENT DDOS ATTACK DETECTION MODEL FOR SDN"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:15/05/2020

PLACE: Periye

VAISHALI RAVI

PCS051924

IMAGE ENCRYPTION SYSTEM BASED ON COMPRESSIVE SENSING

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

RESHMA RAJU

Register No: PCS051925

UNDER THE GUIDANCE OF

Dr.S MANOHAR NAIK

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"IMAGE ENCRYPTION SYSTEM BASED ON COMPRESSIVE SENSING"** submitted by **RESHMA RAJU (REG. NO: PCS051925)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

I, RESHMA RAJU, Reg No: PCS051925, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"IMAGE ENCRYPTION SYSTEM BASED ON COMPRESSIVE SENSING"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: Periye

RESHMA RAJU

PCS051925

DETECTION OF GLAUCOMA DISEASE IN FUNDUS IMAGES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

RIYA SHEKHAR K

Register No: PCS051926

UNDER THE GUIDANCE OF

Dr. S MANOHAR NAIK.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"DETECTION OF GLAUCOMA DISEASE IN FUNDUS IMAGES"** submitted by **RIYA SHEKHAR K (REG. NO: PCS051926)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

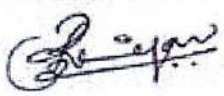
I, RIYA SHEKHAR K, Reg No: PCS051926, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"DETECTION OF GLAUCOMA DISEASE IN FUNDUS IMAGES "**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: Periye

RIYA SHEKHAR K

PCS051926



INTRUSION DETECTION USING ADAPTIVE ENSEMBLE MACHINE LEARNING MODEL

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

ROSHNA ABDULLAH

Register No: PCS051927

UNDER THE GUIDANCE OF

Dr. MANOHAR NAIK S.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

MAY 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"INTRUSION DETECTION USING ADAPTIVE ENSEMBLE MACHINE LEARNING MODEL"** submitted by **ROSHNA ABDULLAH (REG. NO: PCS051927)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

I, ROSHNA ABDULLAH, Reg No: PCS051927, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"INTRUSION DETECTION USING ADAPTIVE ENSEMBLE MACHINE LEARNING MODEL"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:

PLACE:

ROSHNA ABDULLAH

PCS051927

VISUALIZATION OF MALWARE FOR FINE-GRAINED CLASSIFICATION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SANGEETHA K

Register No: PCS051928

UNDER THE GUIDANCE OF

Dr. S MANOHAR NAIK.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,
APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"VISUALIZATION OF MALWARE FOR FINE-GRAINED CLASSIFICATION"** submitted by **SANGEETHA K (REG. NO: PCS051928)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

Dr. Manohar Naik S
Asst Professor
Dept of Computer Science
Central University of Kerala

DECLARATION

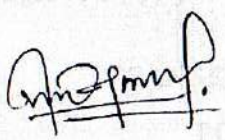
I, SANGEETHA K, Reg No: PCS051928, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"VISUALIZATION OF MALWARE FOR FINE-GRAINED CLASSIFICATION"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: Periye

SANGEETHA K

PCS051928



TEXT DETECTION FROM NATURAL IMAGES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SARATH T R

Register No: PCS051929

UNDER THE GUIDANCE OF

Dr. RAJESH R

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES, CENTRAL UNIVERSITY OF KERALA, TEJASWINI HILLS PERIYE, KASARAGOD - 671316, KERALA, INDIA APRIL 2021

Department of Computer Science, Central University of Kerala Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **TEXT DETECTION FROM NATURAL IMAGES** submitted by **SARATH T R (REG. NO: PCS051929)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Depart- ment of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree

DATE: 30/4/21

Dr. Rajesh R
Associate Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, SARATH T R, Reg No:**PCS051929**, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **" TEXT DETECTION FROM NATURAL IMAGES"**, submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30-04-2021

PLACE: Udma

Sarath T R

PCS051929

INSECT CLASSIFICATION AND DETECTION IN FIELD CROPS USING MODERN MACHINE LEARNING TECHNIQUES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SHAMEEMA S

Register No: PCS051930

UNDER THE GUIDANCE OF

Dr. RAJESH R

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

MAY 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"INSECT CLASSIFICATION AND DETECTION IN FIELD CROPS USING MODERN MACHINE LEARNING TECHNIQUES"** submitted by **SHAMEEMA S (REG. NO: PCS051930)** in partial fulfillment of the requirements for the award of M.Sc. in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE: 30/4/2021

Dr. RAJESH R
Head Of the Department
Associate Professor
Department of Computer Science
Central University of Kerala

DECLARATION

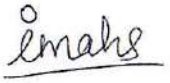
I, SHAMEEMA S, Reg No: PCS051930, student of Fourth Semester M.Sc. Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"INSECT CLASSIFICATION AND DETECTION IN FIELD CROPS USING MODERN MACHINE LEARNING TECHNIQUES"**, submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:

PLACE:

SHAMEEMA S

PCS051930



GRAPH CUT BASED IMAGE SEGMENTATION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SHIVARAMA KRISHNA P K

Register No: PCS051931

UNDER THE GUIDANCE OF

Dr.RAJESH R

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671316,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"GRAPH CUT BASED IMAGE SEGMENTATION"** submitted by **SHIVARAMA KRISHNA P K (REG. NO: PCS051931)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2024

Dr. RAJESH R.
Head of Department
Associate Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, SHIVARAMA KRISHNA P K, Reg No: PCS051931, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"GRAPH CUT BASED IMAGE SEGMENTATION"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:30/04/2021

PLACE: Madhur

SHIVARAMA KRISHNA PK

PCS051931

MACHINE LEARNING ALGORITHMS FOR EARLY DIAGNOSIS OF PARKINSON'S DISEASE

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SNEHAMOL K

Register No: PCS051932

UNDER THE GUIDANCE OF

Dr. RAJESH R.

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"Machine learning algorithms for Early diagosis of Parkinson's disease "** submitted by **SNEHAMOL K (REG. NO: PCS051932)** n partial fulfillment of the requirements for the award of M.Sc in Computer Science from he Department of Computer Science at Central University of Kerala, is an authentic work arried out by him under my supervision and guidance. To the best of my knowledge, the natter embodied in the report has not been submitted to any other University or Institute for he award of any degree.

ATE : 30/4/2021

Dr. RAJESH R.
Associate Professor
Department of Computer Science
Central University of Kerala

कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
KASARAGOD / कासरगोड
Periye - 671316 / पेरिया
Department of Computer Science

DECLARATION

I,SNEHAMOL K, Reg No: PCS051932, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"MACHINE LEARNING ALGORITHMS FOR EARLY DIAGNOSIS OF PARKINSON'S DISEASE "**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:30/05/2021

PLACE: Periye

SNEHAMOL K

PCS051932

White Blood Cells Image Classification Using Deep Learning with Canonical Correlation Analysis

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SREEKANTH.O.P

Register No: PCS051933

UNDER THE GUIDANCE OF

Dr.RAJESH R

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671316,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"White Blood Cells Image Classification Using Deep Learning with Canonical Correlation Analysis"** Submited by **SREEKANTH O P (REG. NO: PCS051933)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by my Knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2021

Dr. RAJESH R
Head Of the Department
Associate Professor
Department of Computer Science
Central University of Kerala

कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
कासरगोड / KASARAGOD
पेरिया / Periye - 671316
Department of Computer Science

DECLARATION

I, SREEKANTH O P, Reg No:**PCS051933** , student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"White Blood Cells Image Classification Using Deep Learning with Canonical Correlation Analysis"**, submitted to the Department of Computer Science, Central University of Kerala is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30-04-2021

PLACE: MAHE

SREEKANTH O P
PCS051933

PLANT LEAF DISEASE DETECTION USING IMAGE PROCESSING

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SREESHMA K

Register No: PCS051934

UNDER THE GUIDANCE OF

Dr. RAJESH R.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"PLANT LEAF DISEASE DETECTION USING IMAGE PROCESSING "** submitted by **SREESHMA K (REG. NO: PCS051934)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2021

Dr. RAJESH R.
Associate Professor
Department of Computer Science
Central University of Kerala

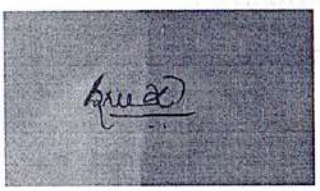
कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
कासरगोड / KASARAGOD
पेरिया / Periye - 671316
Department of Computer Science

DECLARATION

I, SREESHMA K, Reg No: PCS051934, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"PLANT LEAF DISEASE DETECTION USING IMAGE PROCESSING"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:3/05/2021 **SREESHMA K**

PLACE: Periye **PCS051934**



AN AUTOMATED LICENSE PLATE DETECTION AND RECOGNITION SYSTEM

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

SRUTHI M

Register No: PCS051935

UNDER THE GUIDANCE OF

Dr. RAJESH R.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"An automated license plate detection and recognition system"** submitted by **SRUTHI M (REG. NO: PCS051935)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2021

Dr. RAJESH R.
Associate Professor
Department of Computer Science
Central University of Kerala

कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
कासरगोड / KASARAGOD
पेरिया / Periye - 671316
Department of Computer Science

DECLARATION

I,SRUTHI M, Reg No: PCS051935, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"An automated license plate detection and recognition system"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: Periye

SRUTHI M

PCS051935

OPTIC DISC SEGMENTATION FROM FUNDUS IMAGES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

THANUSREE V

Register No: PCS051936

UNDER THE GUIDANCE OF

Dr. RAJESH R.

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"OPTIC DISC SEGMENTATION FROM FUNDUS IMAGES"** submitted by **THANUSREE V (REG. NO: PCS051936)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2021

Dr. RAJESH R.
Associate Professor
Department of Computer Science
Central University of Kerala

कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
कासरगोड / KASARAGOD
पेरिया / Periye - 671316
Department of Computer Science

DECLARATION

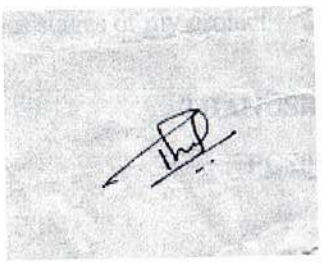
I, THANUSREE V, Reg No: PCS051936, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"Optic disc segmentation from fundus images"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:28/04/2021

PLACE: Periye

THANUSREE V

PCS051936



ECG SIGNAL CLASSIFICATION USING MACHINE LEARNING TECHNIQUES

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

KAVYA BALAN

Register No: PCS051937

UNDER THE GUIDANCE OF

Dr. RAJESH R.

DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF PHYSICAL SCIENCES,
CENTRAL UNIVERSITY OF KERALA,
TEJASWINI HILLS PERIYE, KASARAGOD - 671320,
APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"ECG SIGNAL CLASSIFICATION USING MACHINE LEARNING TECHNIQUES "** submitted by **KAVYA BALAN (REG. NO: PCS051937)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2021

Dr. RAJESH R.
Associate Professor
Department of Computer Science
Central University of Kerala

DECLARATION

I, KAVYA BALAN, Reg No: PCS051937, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"ECG SIGNAL CLASSIFICATION USING MACHINE LEARNING TECHNIQUES"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE: 30/04/2021

PLACE: Periye

KAVYA BALAN

PCS051937

FACIAL EXPRESSION RECOGNITION

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

M.Sc COMPUTER SCIENCE

GREESHMA G K

Register No: PCS051938

UNDER THE GUIDANCE OF

Dr. RAJESH R

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF PHYSICAL SCIENCES,

CENTRAL UNIVERSITY OF KERALA,

TEJASWINI HILLS PERIYE, KASARAGOD - 671320,

APRIL 2021

Department of Computer Science, Central University of Kerala
Thejaswini Hills, Periye - 671320, Kasaragod

CERTIFICATE

This is to certify that the report entitled, **"FACIAL EXPRESSION RECOGNITION"** submitted by **GREESHMA G K (REG. NO: PCS051938)** in partial fulfillment of the requirements for the award of M.Sc in Computer Science from the Department of Computer Science at Central University of Kerala, is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the report has not been submitted to any other University or Institute for the award of any degree.

DATE : 30/4/2021

Dr. RAJESH R.
Associate Professor
Department of Computer Science
Central University of Kerala

कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
कासरगोड / KASARAGOD
पेरिया / Periye - 671316
Department of Computer Science

DECLARATION

I, GREESHMA G K, Reg No: PCS051938, student of Fourth Semester M.Sc Computer Science, Central University of Kerala, do hereby declare that the report entitled, **"FACIAL EXPRESSION RECOGNITION"**,submitted to the Department of Computer Science is an original record of studies and bonafide work carried out by me from December 2020 to April 2021.

DATE:30-04-2021

PLACE: Periye

GREESHMA G K

PCS051938