


CEREBRO WHEELS




DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING
THIRUVANANTHAPURAM-695 018.

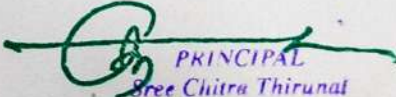
CERTIFICATE

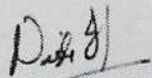
Certified that the project report entitled "CEREBRO WHEELS (BRAIN CONTROLLED WHEELCHAIR)" is a bonafide report submitted by NEJUMA T N SCT19EC081), SANGEETHA B(SCT19EC099) and VISMAL S KUMAR(SCT19EC123) in partial fulfilment for the award of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING from APJ Abdul Kalam Technological University.


DR. NELWIN RAJ N R
ASSISTANT PROFESSOR,
DEPT OF ECE, SCTCE

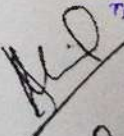
(PROJECT COORDINATOR) N. R
DR. NELWIN RAJ N R
Assistant Professor
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018


DR JISU ELSA JACOB
ASSISTANT PROFESSOR,
DEPT OF ECE, SCTCE
(PROJECT GUIDE)


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18


DR. NISHA JOSE K
HEAD OF DEPARTMENT,
DEPT OF ECE, SCTCE





Nisha Jose K
(Project Guide)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING,
THIRUVANANTHAPURAM - 695018



CERTIFICATE

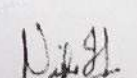
This is to certify that the project report entitled LEAF DISEASE DETECTION USING DEEP LEARNING submitted by LAURA SALEENA AJITH (SCT19EC075), MOHAMMAD NIYAS N (SCT19EC079), POORNIMA BABU S (SCT19EC084) and PRANAV RAJIV (SCT19EC087), in partial fulfilment for the award of the degree of Bachelor of Technology in Electronics and Communication Engineering of APJ Abdul Kalam Technological University, is a bona fide record of project work carried out by them under our supervision. The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.


Dr. Nelwin Raj N R
(Project coordinator)

Assistant Professor,

Dept. of ECE

SCT19EC075
DR. NELWIN RAJ N. R
Assistant Professor
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018

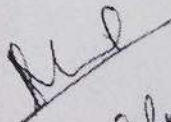

Dr. Nisha Jose K

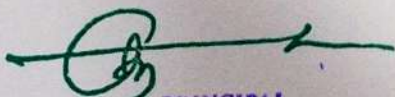
Project Guide

Head of the Department,

Dept. of ECE, SCTCE




Mildyrai
20/06/2025


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING,

THIRUVANANTHAPURAM - 695018

CERTIFICATE

This is to certify that the project report entitled "SOFTWARE DEFINED RADIO IMPLEMENTATION OF SUBCARRIER TELECOMMAND SIGNAL GENERATION" submitted by Pranav P Nair (SCT19EC086), Vandana Krishnan (SCT19EC116), Vipin Reji R(SCT19EC120) and Madhav A Nair (MBT19EC066), in partial fulfilment for the award of the degree of Bachelor of Technology in **Electronics and Communication Engineering** of APJ Abdul Kalam Technological University, is a bona fide record of project work carried out by them under our supervision. The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.

Handwritten signature

Prof. SAJITH SETHU P
PROJECT GUIDE
ASSOCIATE PROFESSOR
Dept. of ECE SCTCE

Handwritten signature
DR. NELWIN RAJ N.R
PROJECT CO-ORDINATOR
ASSISTANT PROFESSOR
Dept. of ECE SCTCE

Handwritten signature

DR. NISHA JOSE K
HEAD OF THE DEPARTMENT
Dept. of ECE SCTCE

Dr. NELWIN RAJ N. R.
Assistant Professor
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018

Handwritten notes:
M.P. Nair
15/09/23



Handwritten signature

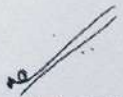
Handwritten signature
PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING,
THIRUVANANTHAPURAM - 695018


CERTIFICATE


This is to certify that the project report entitled **PHYSICAL LAYER AUTHENTICATION IN INDOOR ENVIRONMENTS** submitted by **K R ISHVAR ADITHYA (SCT19EC065), KAVYA S R (SCT19EC071), SHABNAM B (SCT19EC103)**, in partial fulfilment for the award of the degree of Bachelor of Technology in **Electronics and Communication Engineering** of **APJ Abdul Kalam Technological University**, is a bona fide record of project work carried out by them under our supervision. The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.


Dr. Nelwin Raj N. R.
Assistant Professor,
Department of ECE,
SCTCE
Project Co-ordinator

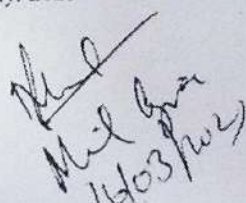
Dr. NELWIN RAJ N. R.
Assistant Professor
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018
Thiruvananthapuram

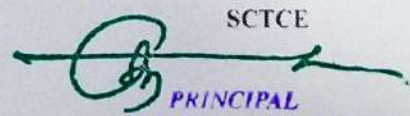
May, 2023


Dr. Renjith R. J.
Assistant Professor,
Department of ECE,
SCTCE
Project Guide


Dr. Nisha Jose K.
Head of the Department,
Dept. of ECE,
SCTCE




Mil Gnan
16/03/2023


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18


SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING

THIRUVANANTHAPURAM-695 018



CERTIFICATE

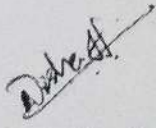
This is to certify that the report entitled " LUNG CANCER CELL IMAGE ENHANCEMENT AND DETECTION USING FOURIER PTYCHOGRAPHIC MICROSCOPE" submitted by SRAVAN H(SCT19EC105), VARUN ASOKAN(SCT19EC118), NIVYA PS (LSCT19EC127) to the APJ Abdul Kalam Technological University in partial fulfillment for the award of the Degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING is a bona fide record of the project work carried out by him under our guidance and supervision. This report in any form has not been submitted to any other University or Institute for any other purpose.



Dr. Nelwin Raj N R
Project Coordinator

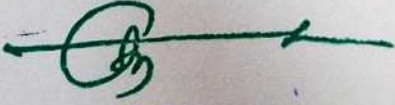
Assistant Professor

Dept. of ECE
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018
Department of Electronics and
Communication Engineering
Assistant Professor

DR NELWIN RAJ N R


Dr Nisha Jose K
Head of Department
Dept of ECE,SCTCE


Prof. SUBHA V
Project Guide
Assistant Professor
Dept. of ECE


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18





DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING
THIRUVANANTHAPURAM-695 018.




CERTIFICATE

certified that the project report (preliminary) entitled "SMART PARKING RESERVATION SYSTEM USING IOT" is a bonafide report submitted by KESAV VENU (SCT19EC072), MEENAKSHI VIYAGOPAL (SCT19EC078) AND SRADHA SUDHAKARAN (SCT19EC104) in partial fulfillment for the award of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING from P.J. Abdul Kalam Technological University.

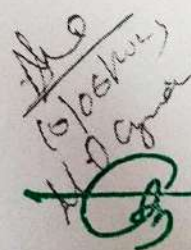

DR. NELWIN RAJ N. R.
PROJECT CO-ORDINATOR
ASSISTANT PROFESSOR
DEPARTMENT OF
ELECTRONICS &
COMMUNICATION


DR. JISU ELSA JACOB
PROJECT GUIDE
ASSISTANT PROFESSOR
DEPARTMENT OF
ELECTRONICS &
COMMUNICATION

Dr. NELWIN RAJ N. R.
Assistant Professor
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018


DR. NISHA JOSE K.
HEAD OF THE
DEPARTMENT
DEPARTMENT OF
ELECTRONICS &
COMMUNICATION



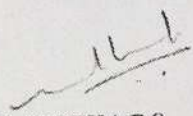

PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Thiruvananthapuram - 18



DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING
THIRUVANANTHAPURAM

CERTIFICATE

This is to certify that the report entitled DESIGN AND SIMULATION OF SUPERCAPACITOR WITH IMPROVED ENERGY DENSITY submitted by NIDHIN SUDHAKARAN (SCT19EC082), RICHIE SIDDHARTHA WALSALAM (SCT19EC092), RIJO KURIAN (SCT19EC093), STEBIN MATHEW .T (SCT19EC112) , to the APJ Abdul Kalam Technological University in partial fulfilment of the B.tech. degree in Electronics and communication Engineering is a bonafide record of the project work carried out by them under our guidance and supervision.


DR. SMITHA P.S

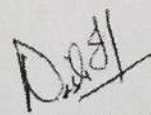
(Project Guide)
Assistant Professor
Dept. of ECE
Sree Chitra Thirunal College of
Engineering


DR. NELWIN RAJ N.R

(Project Coordinator)
Assistant Professor
Dept. of ECE
Sree Chitra Thirunal College of
Engineering

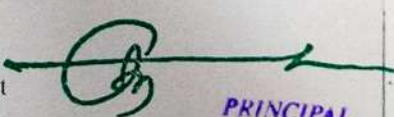
Dr. NELWIN RAJ N. R
Assistant Professor

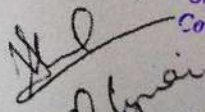
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018


DR. NISHA JOSE K.

Professor and Head of the Department
Dept. of ECE
Sree Chitra Thirunal College of
Engineering




PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18



N. S. Srinivasan
19/06/2023



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING,
THIRUVANANTHAPURAM - 695018

CERTIFICATE

This is to certify that the project report entitled "Design and Simulation of Gas particle detection and classification using COMSOL Multiphysics" submitted by KARTHIKA S (SCT19EC070), POORNIMA R J (SCT19EC085), RAHUL H KRISHNAN (SCT19EC088), SRUTHI J (SCT19EC111), in partial fulfilment for the award of the degree of Bachelor of Technology in Electronics and Communication Engineering of APJ Abdul Kalam Technological University, is a bona fide record of project work carried out by them under our supervision. The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.


Dr. Smitha P S

(Project Guide)

Assistant Professor,

Dept. of ECE,

SCTCE

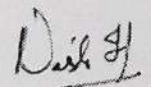

Dr. NELWIN RAJ N R

(Project Coordinator)

Assistant Professor,

Dept. of ECE,

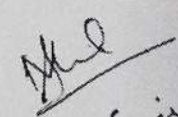
SCTCE


Dr. Nisha Jose K.

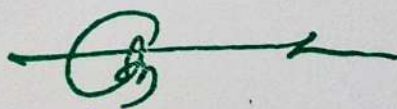
Head of the Department,

Dept. of ECE,

SCTCE


Mil Cyri
20/06/2021




PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18

DEPARTMENT OF ELECTRONICS & COMMUNICATION
ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING
THIRUVANANTHAPURAM-695018.



CERTIFICATE

Certified that the project report entitled -TIME SYNCHRONIZATION OVER ETHERNET IN AUTOSAR CLASSIC is a bonafide report submitted by MALAVIKA GOPAN (SCT19EC076), SEETHA LEKSHMI S (SCT19EC102), SREERAJ R NAMBOOTHIRI (SCT19EC109), VISHNUPRIYA A (SCT19EC122) in partial fulfillment for the award of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING from APJ Abdul Kalam Technological University.

Dr. NELWIN RAJ N. R

Dr. NELWIN RAJ N Assistant Professor
ASSISTANT PROFESSOR of Electronics and
PROJECT COORDINATOR of Communication Engineering
SCTCE Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018

Mr. MUHAMMED ROSHIN
SPECIALIST- TBU
EXTERNAL PROJECT GUIDE
INDUSTRY EXPERT
TATA ELXSI

Datta

Dr. NISHA JOSE K
HEAD OF DEPARTMENT
DEPARTMENT OF ECE
SCTCE

J. Jacob

Dr. JISU ELSA JACOB
ASSISTANT PROFESSOR
PROJECT GUIDE
SCTCE



M. J. Jacob
20/6/22

J. Jacob

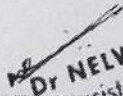
PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18

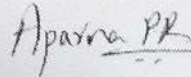
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING
THIRUVANANTHAPURAM-695018




CERTIFICATE

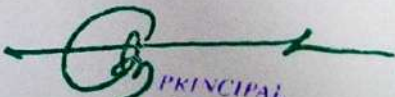
Certified that the project report entitled "AUTOMATIC DETECTION AND CLASSIFICATION OF HEPATIC TUMOR FROM CT SCAN USING DEEP LEARNING" is a bonafide report submitted by HARIKRISHNAN S D (SCT19EC064), KRISHNAPRIYA K (SCT19EC074), REMYA BABU S(SCT19EC090), SAHLA R (SCT19EC096) in the partial fulfilment for the award of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING from APJ Abdul Kalam Technological University.


DR. NELWIN RAJ N. R
Assistant Professor
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018
Dept. of ECE, SCTCE


PROF. APARNA P R
(Project Guide)
Assistant Professor
Dept. of ECE, SCTCE




DR. NISHA JOSE K
Head of the Department
Dept. of ECE, SCTCE


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING



CERTIFICATE

This is to certify that the project report entitled "DESIGN AND SIMULATION OF PEROVSKITE SOLAR CELL WITH IMPROVED OPTICAL AND THERMAL PROPERTIES" is a bonafide report submitted by Janaki Devi R (SCT19EC066), Nithin Sreekumar (SCT19EC083), Vinayak A S (SCT19EC119), Visakh B Raj (SCT19EC121) in partial fulfillment for the award of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING from APJ Abdul Kalam Technological University.

DR. SMITHA P.S
(Project Guide)
Assistant professor
Dept. of Electronics and
Communication Engineering,
SCTCE

DR. NELWIN RAJ N.R
(Project Coordinator)
Assistant Professor
Dept. of Electronics and
Communication Engineering
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018

PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18

Dr. Nisha Jose K
Head of the Department
Dept. of Electronics and
Communication Engineering,
SCTCE


29/6/23

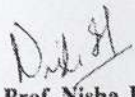


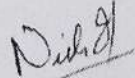


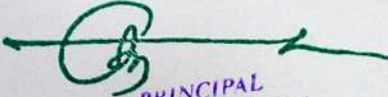
CERTIFICATE

This is to certify that the report entitled "SMART HEADLIGHT CONTROL SYSTEM USING CONVOLUTIONAL NEURAL NETWORKS" submitted by NEENA S L (SCT19EC080), REJINA RAJAN (SCT19EC089), R S VISHNU (SCT19EC095) and SHWETHA K P (SCT18EC096) to the APJ Abdul Kalam Technological University in partial fulfillment for the award of the Degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING is a bonafide record of the project work carried out by them under our guidance and supervision. This report in any form has not been submitted to any other University or Institute for any other purpose.

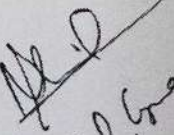

Dr. Nelwin Raj
(Project Coordinator)
Assistant Professor
ECE, SCTCE
Department of Electronics and
Communication Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram - 695018


Prof. Nisha Jose K
(Project Guide)
Assistant professor
Dept. of ECE, SCTCE


Prof. Nisha Jose K
Head of Department
Dept. of ECE, SCTCE


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18



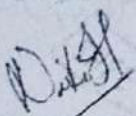

M.P. G...
22/6/2021




DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
SREE CHITRA THIRUNAL COLLEGE OF ENGINEERING,
THIRUVANANTHAPURAM - 695018

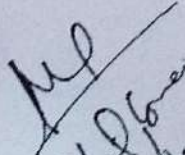
CERTIFICATE

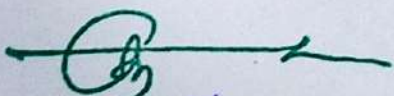
This is to certify that the project report entitled "TRAIT (Train Rail Analysis and Integrity Tester)" submitted by SREERAG S NAIR (SCT19EC108) VYSHNAV K V (SCT18EC111), SUMESH S (LSCT19EC128), and VISAKH R S (LSCT19EC129) in partial fulfilment for the award of the degree of Bachelor of Technology in Electronics and Communication Engineering of APJ AbdulKalam Technological University, is a bona fide record of project work carried out by them under our supervision. The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.


Dr. NISHA JOSE K
(Project Guide)
Head of the
Department,
Dept. of ECE,
SCTCE


Dr. NELWIN RAJ N R
(Project Coordinator)
Assistant Professor,
Dept. of ECE,
SCTCE




M. Q. B. S.
22/6/2024


PRINCIPAL
Sree Chitra Thirunal
College of Engineering
Trivandrum - 18