



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

**APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES**

Date of Application:26-05-2020

Department	ELECTRONICS AND COMMUNICATION ENGINEERING	Application No.	20200022
Area of Research	MEDICAL IMAGE PROCESSING	Research Mode	PART TIME

**Name** :SARATHKUMAR. M  
**Date of Birth / Age** :01-09-1993 / 26 Years  
**Gender** :MALE  
**Category** :MBC  
**e-Mail ID** :msksarathkumar01@gmail.com  
**Mobile** :07693125782



*M. Sarath*

<b>Father's/Husband's Name</b>	MUNIYASAMY. R	<b>Father's/Husband's Occupation</b>	POLICE OFFICER
<b>Family Income</b>	25000	<b>Residential Type</b>	URBAN
<b>Birth Place</b>	MADURAI	<b>Mother Tongue</b>	TAMIL
<b>Religion</b>	HINDU	<b>Martial Status</b>	SINGLE
<b>Aadhaar No.</b>	203002204274	<b>PAN No.</b>	FVWPS3881P
<b>Physically Challenged</b>	NO	<b>Type of Disability</b>	-
<b>Address for Communication:</b> 34/8 AGASTHIAR 3RD EAST CROSS ST VILLAPURAM MADURAI DISTRICT TAMILNADU INDIA Pin-625012		<b>Permenant Address:</b> 34/8 AGASTHIAR 3RD EAST CROSS ST VILLAPURAM MADURAI DISTRICT TAMILNADU INDIA Pin-625012	

Qualification						
Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
PG	ECE(COMMUNICATION SYSTEM)	ANNA UNIVERSITY	2017	8.92	FIRST CLASS WITH DISTINCTION	REGULAR
UG	ECE	ANNA UNIVERSITY	2015	8.15	FIRST CLASS	REGULAR
HSC	BIOMATHS		2011	72.8	FIRST CLASS	REGULAR
SSLC			2009	70.4	FIRST CLASS	REGULAR

Experience				
Organization	Designation	Experience From	Experience TO	Work Nature
MKU	CONSOLIDATED PAY BASIS	2019-08-13	2020-05-20	LECTURER

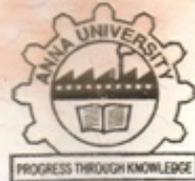
Payment Details
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Transaction ID	Reference	Date of transaction	Amount	Status
20200022_200612151824	SSBI8890826902	12-06-2020	600	SUCCESS

## **Research Proposal**

The novel coronavirus 2019 (COVID-2019), which first appeared in Wuhan city of China in December 2019, spread rapidly around the world and became a pandemic. It has caused a devastating effect on both daily lives, public health, and the global economy. It is critical to detect the positive cases as early as possible so as to prevent the further spread of this epidemic and to quickly treat affected patients. The need for auxiliary diagnostic tools has increased as there are no accurate automated toolkits available. Recent findings obtained using radiology imaging techniques suggest that such images contain salient information about the COVID-19 virus. Application of advanced artificial intelligence (AI) techniques coupled with radiological imaging can be helpful for the accurate detection of this disease, and can also be assistive to overcome the problem of a lack of specialized physicians in remote villages. In this study, a new model for automatic COVID-19 detection using raw chest X-ray images is presented. The proposed model is developed to provide accurate diagnostics for binary classification (COVID vs. No-Findings) and multi-class classification (COVID vs. No-Findings vs. Pneumonia). Our model produced a classification accuracy of 98.08% for binary classes and 87.02% for multi-class cases. The DarkNet model was used in our study as a classifier for the you only look once (YOLO) real time object detection system. We implemented 17 convolutional layers and introduced different filtering on each layer.

# Anna University



Reg.No. 921711106097/RG

*The Syndicate of the Anna University hereby makes known that*  
**SARATHKUMAR M** *has been admitted to the* **DEGREE OF**  
**BACHELOR OF ENGINEERING** *in* **ELECTRONICS AND**  
**COMMUNICATION ENGINEERING** *under the Faculty of*  
*Information and Communication Engineering, having completed the*  
*prescribed programme of study and having been certified by the duly appointed*  
*examiners to be qualified to receive the same, and has been placed in* **FIRST**  
**CLASS** *at the Examination held in* **APRIL 2015** .

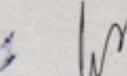
*Given under the Seal of the University*



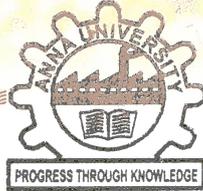
Chennai 600 025  
India  
January 2016

  
Controller of Examinations

  
Registrar

  
Vice-Chancellor

# Anna University



Reg.No. 15N017/RG



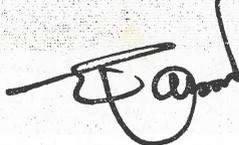
The Syndicate of the Anna University hereby makes known that **SARATHKUMAR M** has been admitted to the **DEGREE OF MASTER OF ENGINEERING** in **COMMUNICATION SYSTEMS** under the *Faculty of Information and Communication Engineering*, having completed the prescribed programme of study through **THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI** an autonomous college affiliated to this University and having been certified by the duly appointed examiners to be qualified to receive the same, and has been placed in **FIRST CLASS WITH DISTINCTION** at the Examination held in **APRIL 2017**.

*Given under the Seal of the University*



Chennai 600 025  
India  
June 2018  
0P16440300123

  
Controller of Examinations

  
Registrar

  
Vice-Chancellor

5D985DF7764DE8B3B1DC6A78A AA 1982



NAME OF THE CANDIDATE	SARATHKUMAR M	REGISTER NO.	921711106097	REGULATIONS	2008
COLLEGE OF STUDY	SETHU INSTITUTE OF TECHNOLOGY	GENDER	MALE	DATE OF BIRTH	01-SEP-93
PROGRAMME & BRANCH	B.E. Electronics and Communication Engineering	MONTH & YEAR OF LAST APPEARANCE	April 2015	MEDIUM OF INSTRUCTION	English

SEM	COURSE CODE	COURSE TITLE	C	LG	GP	MONTH & YEAR OF PASSING	SEM	COURSE CODE	COURSE TITLE	C	LG	GP	MONTH & YEAR OF PASSING
01	CY2111	Engineering Chemistry - I	3	B	8	JAN 2012	05	EC2305	Transmission Lines and Wave Guides	4	C	7	NOV 2013
01	GE2111	Engineering Graphics	5	C	7	JAN 2012	05	GE2021	Environmental Science and Engineering	3	C	7	NOV 2013
01	GE2112	Fundamentals of Computing and Programming	3	B	8	JAN 2012	05	EC2306	Digital Signal Processing Lab	2	S	10	NOV 2013
01	HS2111	Technical English - I	4	D	6	JAN 2012	05	EC2307	Communication Systems Lab	2	S	10	NOV 2013
01	MA2111	Mathematics - I	4	B	8	JAN 2012	05	EC2308	Microprocessor and Microcontroller Lab	2	S	10	NOV 2013
01	PH2111	Engineering Physics - I	3	B	8	JAN 2012	06	EC2351	Measurements and Instrumentation	3	A	9	APR 2014
01	GE2115	Computer Practice Laboratory - I	2	S	10	JAN 2012	06	EC2352	Computer Networks	3	B	8	APR 2014
01	GE2116	Engineering Practices Laboratory	2	A	9	JAN 2012	06	EC2353	Antenna and Wave Propagation	4	C	7	APR 2014
02	CY2161	Engineering Chemistry - II	3	B	8	JUN 2012	06	EC2354	VLSI Design	3	C	7	APR 2014
02	EC2151	Electric Circuits and Electron Devices	4	A	9	JUN 2012	06	MG2351	Principles of Management	3	C	7	APR 2014
02	GE2152	Basic Civil & Mechanical Engineering	4	B	8	JUN 2012	06	MA2264	Numerical Methods	4	B	8	APR 2014
02	HS2161	Technical English - II	4	B	8	JUN 2012	06	EC2356	Computer Networks Lab	2	S	10	APR 2014
02	MA2161	Mathematics - II	4	A	9	JUN 2012	06	EC2357	VLSI Design Lab	2	S	10	APR 2014
02	PH2161	Engineering Physics - II	3	B	8	JUN 2012	06	GE2321	Communication Skills Laboratory	2	B	8	APR 2014
02	EC2155	Circuits and Devices Laboratory	2	S	10	JUN 2012	07	EC2401	Wireless Communication	3	C	7	NOV 2014
02	GE2155	Computer Practice Laboratory - II	2	B	8	JUN 2012	07	EC2402	Optical Communication and Networking	3	C	7	NOV 2014
02	GS2165	Physics and Chemistry Laboratory	2	A	9	JUN 2012	07	EC2403	RF and Microwave Engineering	3	B	8	NOV 2014
03	EC2201	Electrical Engineering	3	B	8	NOV 2012	07	CS2060	High Speed Networks	3	A	9	NOV 2014
03	EC2202	Data Structures and Object Oriented Programming in C++	3	C	7	NOV 2012	07	EC2034	Television and Video Engineering	3	E	5	NOV 2014
03	EC2203	Digital Electronics	4	B	8	NOV 2012	07	GE2025	Professional Ethics in Engineering	3	C	7	NOV 2014
03	EC2204	Signals and Systems	4	B	8	NOV 2012	07	EC2404	Electronics System Design Lab	2	S	10	NOV 2014
03	EC2205	Electronic Circuits - I	4	B	8	NOV 2012	07	EC2405	Optical & Microwave Lab	2	S	10	NOV 2014
03	MA2211	Transforms and Partial Differential Equations	4	B	8	NOV 2012	08	EC2042	Embedded and Real Time Systems	3	B	8	APR 2015
03	EC2207	Digital Electronics Lab	2	S	10	NOV 2012	08	EC2045	Satellite Communication	3	B	8	APR 2015
03	EC2208	Electronics Circuits Lab - I	2	S	10	NOV 2012	08	EC2451	Project Work	6	S	10	APR 2015
03	EC2209	Data Structures and Object Oriented Programming Lab	2	B	8	NOV 2012							
04	EC2251	Electronics Circuits II	4	C	7	APR 2013							
04	EC2252	Communication Theory	4	B	8	APR 2013							
04	EC2253	Electromagnetic Fields	4	B	8	APR 2013							
04	EC2254	Linear Integrated Circuits	3	A	9	APR 2013							
04	EC2255	Control Systems	3	A	9	APR 2013							
04	MA2261	Probability and Random Processes	4	B	8	APR 2013							
04	EC2257	Electronics Circuits II and Simulation Lab	2	S	10	APR 2013							
04	EC2258	Linear Integrated Circuit Lab	2	S	10	APR 2013							
04	EC2259	Electrical Engineering and Control System Lab	2	S	10	APR 2013							
05	EC2301	Digital Communication	3	B	8	NOV 2013							
05	EC2302	Digital Signal Processing	4	B	8	NOV 2013							
05	EC2303	Computer Architecture and Organization	3	B	8	NOV 2013							
05	EC2304	Microprocessors and Microcontrollers	4	D	6	NOV 2013							

\*\*\* End of Statement \*\*\*

Cumulative Grade Point Average : 8.15

Classification : FIRST CLASS



SEM - Semester, C- Credits, LG - Letter Grade, GP - Grade Point

Range of Marks	91 - 100	81 - 90	71 - 80	61 - 70	57 - 60	50 - 56	< 50
Letter Grade	S	A	B	C	D	E	U
Grade Point	10	9	8	7	6	5	0

$$CGPA = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where  $C_i$  - is the credits assigned to the course  
 $GP_i$  - is the point corresponding to the grade obtained for each course  
 $n$  - is number of all courses successfully cleared during all the semesters

*M. Sarath*  
SIGNATURE OF THE STUDENT



*[Signature]*  
CONTROLLER OF EXAMINATIONS



**THIAGARAJAR COLLEGE OF ENGINEERING**  
(An Autonomous Institution Affiliated to Anna University)  
**MADURAI - 625 015 (INDIA)**

Sl.No : 2017/17

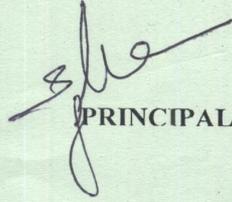
**TRANSFER CERTIFICATE**

Roll No : CN444

Regr.No. 15N017

- |  |   |  |
|--|---|--|
| 1. Name of the Student   | : | SARATHKUMAR, M.  |
| 2. Nationality, Religion   | : | Indian, Hindu.   |
| 3. Community & Caste   | : | DNC - Maravar.   |
| 4. Date of Birth as entered in Admission Register  | } | 01 - 09 - 1993 (First September Nineteen Ninety Three) |
| 5. Class in which the student was studying at the time of leaving                                  | } | M.E. - Communication System- IV Semester.              |
| 6. Date of admission or promotion to that Class  | } | 10 - 08 - 2015.  |
| 7. Whether qualified for promotion to a higher class   | } | Refer to Mark Sheet.                                   |
| 8. Date on which the student actually left the college   | } | 05 - 05 - 2017.  |
| 9. Date on which application for Transfer Certificate was made by the student or Parent / Guardian | } | 05 - 05 - 2017.  |
| 10. Reason for his leaving   | : | Course Completed.                                      |
| 11. Medium of Instruction  | : | English.   |
| 12. Date of Transfer Certificate   | : | 05 - 05 - 2017.  |



  
PRINCIPAL

ANNEXURE-I

CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./Ms./Mrs. M. SARATHKUMAR is  
employed as Consolidated Pay Basis Lecturer (Designation) in the  
University Science Instrumentation Centre (Department/Division Name)  
of Madurai Kamaraj University  
(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: 21/05/2020

G. Raj Kumar  
21/5/2020  
Signature of the Head of Organization with office seal

**Er. P. RAJKUMAR**, B.E., M.Sc(IT),  
M.Sc(Env), PGDCA,  
Director in-Charge  
University Science Instrumentation Centre  
Madurai Kamaraj University, Madurai-625021

आयकर विभाग

INCOME TAX DEPARTMENT



भारत सरकार

GOVT. OF INDIA



स्थायी लेखा संख्या कार्ड  
Permanent Account Number Card

FVWPS3881P



नाम / Name

M SARATHKUMAR

पिता का नाम / Father's Name

MUNIYASAMY

जन्म की तारीख / Date of Birth

01/09/1993

हस्ताक्षर / Signature





# India Driving Licence(Tamilnadu)

Form 7

DOI 13/11/2013

D.L.No : TN58 20130011056  
 Name : SARATH KUMAR M  
 S/D/W of : MUNTYASAMY R  
 Address :  
 5/6 21/9, MUTHURAMALINGA DEVAR  
 STREET  
 MADURAI 625009  
 Temp.Addr:  
 GAYATHRI DRIVING SCHOOL  
 D.O.B. : 01/09/1993      B.G.:



Punishments:

Licensed to drive throughout India, vehicles of the following descriptions  
 M/CYCL.WG 13/11/2013 TN58    LMV 13/11/2013 TN58

Non-Transport Veh.Valid upto 12/11/2033



*M. Sarath*  
 Signature/L.T.I  
 of the Holder

*[Handwritten Signature]*  
 Ass.Licensing Authority  
 RTOMADURAI SOUTH MADURAI

R.Dis. 581/2004 dt.

**DNC**சான்றிதழ் எண் :  
Certificate No. :மாவட்டக் குறியீடு எண் :  
District Code :வட்டக் குறியீடு எண் :  
Taluk Code :கிராமக் குறியீடு எண் :  
Village Code :

7	6
0	6
0	37

0868984

சாதிச் சான்றிதழ்

COMMUNITY CERTIFICATE

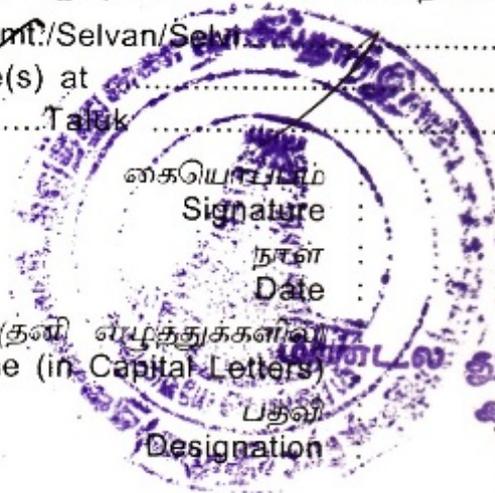
கிராமநாதபுரம் மாவட்டம் கருக் வட்டம்  
பெரியமணங்குடி கிராமம்/நகரம், திரு. / திருமதி / செல்வி/  
செல்வன் சீரக்குமார் தகப்பனார்/கணவர்  
பெயர் சுவாமிசாமி கந்தி மகவர்

வகுப்பைச் சார்ந்தவர், அரசு ஆணை நிலை எண் 28, பிற்பட்ட மற்றும் மிகவும் பிற்பட்ட பிரிவின் நலத் துறை, நாள் 19-7-1994 வரிசை எண் 220 படி, சீர்மரபினர் பிரிவினைச் சார்ந்தவர் எனச் சான்றளிக்கப்படுகிறது.

This is to certify that..... Son / Daughter  
of Thiru..... of.....  
.....Village / Town,..... Taluk,.....  
..... District of the State of Tamil Nadu belongs to  
.....Community, which is recognised as  
a Denotified Community as per Government Order (Ms.) No. 28, Backward  
Classes and Most Backward Classes Welfare, dated 19th July 1994 vide  
Serial No.....

2. திரு. / திருமதி / செல்வன் / செல்வி சீரக்குமார்  
என்பவரும் அவருடைய குடும்பத்தினரும் தமிழ்நாட்டில் கிராமநாதபுரம்  
மாவட்டத்தில் கருக் வட்டத்தில் பெரியமணங்குடி  
கிராமத்தில் / நகரத்தில் வசித்து வருகிறார்கள் எனச் சான்றளிக்கப்படுகிறது.

2. It is certified that Thiru/Tmt./Selvan/Selvi..... and  
his/her family ordinarily reside(s) at.....Village/  
Town..... Taluk..... District of  
Tamil Nadu.

முத்திரை:  
Seal :பெயர் (தலை எழுத்துக்களில்)  
Name (in Capital Letters)பதவி  
Designationதுணை வட்டாட்சியா  
கழுதி வட்டம்

17/6

ANNEXURE-I

CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./Ms./Mrs. M. SARATHKUMAR is employed as Consolidated Pay Basis Lecturer (Designation) in the University Science Instrumentation Centre (Department/Division Name) of Madurai Kamaraj University (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: 21/05/2020

G. Raj Kumar  
21/5/2020  
Signature of the Head of Organization with office seal

**Er. P. RAJKUMAR**, B.E., M.Sc(IT),  
M.Sc(Env), PGDCA,  
Director in-Charge  
University Science Instrumentation Centre  
Madurai Kamaraj University, Madurai-625021