



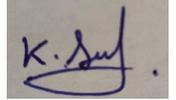
Anand Nagar, Krishnankoil - 626126, Srivilliputtur (via), Virudhunagar District, Tamilnadu.

APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:10-07-2021

Department	COMPUTER SCIENCE AND ENGINEERING	Application No.	202110198
Area of Research	ARTIFICIAL INTELLIGENCE	Research Mode	PART TIME

Name :SUDHA K
Date of Birth / Age :06-05-1997 / 24 Years
Gender :FEMALE
Category :MBC
e-Mail ID :sudhamsc.1998@gmail.com
Mobile :8489411336



Father's/Husband's Name	RAMARAJAN N	Father's/Husband's Occupation	KOOLI
Family Income	70000	Residential Type	RURAL
Birth Place	TAMILNADU	Mother Tongue	TAMIL
Religion	HINDU	Martial Status	MARRIED
Aadhaar No.	783737774237	PAN No.	HPWPS1755G
Physically Challenged	NO	Type of Disability	-
Address for Communication: 212 AALAVOORANI ANNA COLONY, THIRUTHANGAL SIVAKASI VIRUDHUNAGAR DISTRICT TAMILNADU INDIA Pin-626130		Permenant Address: 212 AALAVOORANI ANNA COLONY, THIRUTHANGAL SIVAKASI VIRUDHUNAGAR DISTRICT TAMILNADU INDIA Pin-626130	

Qualification						
Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
M.SC	COMPUTER SCIENCE	MK UNIVERSITY	2019	82	FIRST CLASS WITH DISTINCTION	REGULAR
B.SC	COMPUTER SCIENCE	MK UNIVERSITY	2017	73	FIRST CLASS	REGULAR

Experience					
Organization	Designation	Experience From	Experience TO	Work Nature	

Payment Details				
Transaction ID	Reference	Date of transaction	Amount	Status
202110198_210720191539	VUR20128460910	20-07-2021	600	SUCCESS

SELF-SUPERVISED LEARNING IMAGE RECOGNITION USING DEEP LEARNING

Artificial intelligence has existed under different names since the 60s computer vision and image recognition. Computer vision is the art and science of making computers understand images, brain is indeed a beautiful machine. From one single picture, it can retrieve more information. Humans can easily distinguish between places, objects, and people based on images, but computers have traditionally had difficulties with understanding these images. From time to time, you can hear terms like “Computer Vision” and or “Image Recognition”. Computer vision is a wide area in which deep learning is used to perform tasks such as image processing, image classification, object detection, object segmentation, image coloring, image reconstruction, and image synthesis. In computer vision, computers or machines are created to reach a high level of understanding from input digital images or video to automate tasks that the human visual system can perform. Whereas, image recognition is a field of computer vision that interprets images to aid decision-making. Image recognition is the final stage of image processing, which is one of the most important tasks of computer vision. Deep learning has brought significant developments in image understanding tasks such as object detection, image classification, and image segmentation. Self-supervised learning is a form of unsupervised learning that allows the network to learn rich visual features that help in performing downstream computer vision tasks such as image classification, object detection, and image segmentation. This paper provides a thorough review of self-supervised learning which has the potential to revolutionize the computer vision field using unlabeled data. First, the motivation of self-supervised learning is discussed, and other annotation efficient learning schemes. Various handcrafted pretext tasks are explained that enable learning of visual features using unlabeled image dataset. The paper also highlights the recent breakthroughs in self-supervised learning using contrastive learning and clustering methods that are outperforming supervised learning.

Keywords

Deep learning, self-supervised learning, Artificial intelligence.



அறிவியற் புலம்
FACULTY OF SCIENCE

மதுரை காமராசர் பல்கலைக்கழக ஆட்சிப்பேரவை
கூடா. சி. இப்பல்கலைக்கழகத்தில் இணைந்த

தன்னாட்சிக் கல்லூரியான

ஸ்ரீ காளீஸ்வரி கல்லூரி, சிவகாசி

விதித்திருந்த பாடப் பயிற்சியினையும் தேர்வினையும் நன்கு முடித்த பின்னர் ஏப்பிரல் 2019 இல் நடைபெற்ற தேர்வில்

தனிச்சிறப்புடன் களர்ந்த முகல் வகுப்பு பெற்று தேர்வுற்றார் எனக் கல்லூரித் தேர்வு ஏற்புக்குழு பரிந்துரைத்தவாறு.

கணினி அறிவியல் பீஸிவில் அறிவியல் சிறைஞர் பட்டம்

பெறுதற்கு உரியவர் ஆகின்றார் என இதன்வழி அறிவிக்கின்றது.

பல்கலைக்கழக இலச்சினையுடன் இது வழங்கப்படுகின்றது.

The Senate of the MADURAI KAMARAJ UNIVERSITY

hereby makes known that SUDHA K has been admitted to the

DEGREE OF MASTER OF SCIENCE IN COMPUTER SCIENCE

he/she having successfully completed the course of studies and examination prescribed therefor by the

SRI KALISWARI COLLEGE - SIVAKASI

(an Autonomous College of this University) and upon the recommendation by the College Awards Committee and

having been placed by them in the FIRST CLASS WITH DISTINCTION

at the Examination held in APRIL 2019

Register No. : A7PCS004

Centre Code : 629



Given under the seal of the University

பல்கலைநகர், மதுரை - 625 021

Palkalainagar, Madurai - 625 021

நாள் Dated

28 September 2019

தேர்வாணையர்
Controller of Examinations

பதிவாளிபாறுப்பு
Registrar In-charge

துணைவேந்தர்.
Vice-Chancellor



SRI KALISWARI COLLEGE (Autonomous), SIVAKASI

(RE-ACCREDITED WITH 'A' GRADE BY NAAC)

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY, MADURAI)

B.Sc.(CS)



No. SKC U 1801

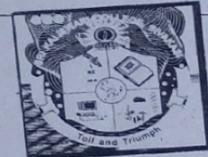
CONSOLIDATED MARKS AND GRADES

NAME OF THE CANDIDATE				REGISTER NO.	DATE OF PUBLICATION			EXAM. M & YR		CENTRE CODE					
SUDHA.K				A4UCS043	09/06/2017			APR. 2017		629					
PART	SEMESTER	COURSE CODE	COURSE TITLE	CREDITS	MAXIMUM			MARKS SECURED			GRADE POINT	GRADE	RESULT	MONTH & YEAR	
					INT.	EXT.	TOT.	INT.	EXT.	TOT.					
I	1	12UTAL11	TAMIL I	3	25	75	100	16	41	57	5.7	B+	P	N.14	
I	2	12UTAL21	TAMIL II	3	25	75	100	20	35	55	5.5	B+	P	A.15	
I	3	12UTAL31	TAMIL III	3	25	75	100	19	50	69	6.9	A+	P	N.15	
I	4	12UTAL41	TAMIL IV	3	25	75	100	21	53	74	7.4	A++	P	A.16	
II	1	12UENL11	ENGLISH I	3	25	75	100	17	44	61	6.1	A	P	N.14	
II	2	12UENL21	ENGLISH II	3	25	75	100	17	45	62	6.2	A	P	A.15	
II	3	12UENL31	ENGLISH III	3	25	75	100	17	40	57	5.7	B+	P	N.15	
II	4	12UENL41	ENGLISH IV	3	25	75	100	19	40	59	5.9	B+	P	A.16	
III	1	12UCSA11	MATHEMATICAL FOUNDATIONS	3	25	75	100	19	53	72	7.2	A++	P	N.14	
III	1	12UCSC11	FOUNDATION COURSE - PROGRAMMING IN C	5	25	75	100	15	39	54	5.4	B	P	N.14	
III	1	12UCSC1P	DATA STRUCTURES USING C++ LAB	4	40	60	100	35	60	95	9.5	O+	P	N.14	
III	2	12UCSA21	OPERATIONS RESEARCH	3	25	75	100	18	41	59	5.9	B+	P	A.15	
III	2	12UCSC21	DATA STRUCTURES AND C++ PROGRAMMING	5	25	75	100	16	42	58	5.8	B+	P	A.15	
III	2	12UCSC2P	DATA STRUCTURES USING C++ LAB	5	40	60	100	39	55	94	9.4	O	P	A.15	
III	3	12UCSA31	FUNDAMENTALS OF STATISTICS	3	25	75	100	18	56	74	7.4	A++	P	N.15	
III	3	12UCSC31	OBJECT ORIENTED PROGRAMMING WITH JAVA	5	25	75	100	14	53	67	6.7	A+	P	N.15	
III	3	12UCSC3P	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	5	40	60	100	34	50	84	8.4	D+	P	N.15	
III	4	12UCSA41	COMPUTER ORIENTED NUMERICAL METHODS	3	25	75	100	20	62	82	8.2	D+	P	A.16	
III	4	12UCSC41	DATABASE MANAGEMENT SYSTEM	5	25	75	100	16	32	48	4.8	C+	P	A.16	
III	4	12UCSC4P	RELATIONAL DATABASE MANAGEMENT SYSTEM LAB	5	40	60	100	40	45	85	8.5	D++	P	A.16	
III	4	12UCSO41	COMPUTER ALGORITHM	3	25	75	100	16	44	60	6.0	A	P	A.16	
III	5	12UCSC51	COMPUTER NETWORKS	5	25	75	100	18	49	67	6.7	A+	P	N.16	
III	5	12UCSC52	COMPUTER GRAPHICS AND MULTIMEDIA	5	25	75	100	20	55	75	7.5	D	P	N.16	
III	5	12UCSC5P	VISUAL BASIC PROGRAMMING LAB	5	40	60	100	37	42	79	7.9	D	P	N.16	
III	5	12UCSC5Q	COMPUTER GRAPHICS WITH MULTIMEDIA LAB	5	40	60	100	38	60	98	9.8	O+	P	N.16	
III	5	12UCSO52	SYSTEM SOFTWARE	3	25	75	100	18	35	53	5.3	B	P	N.16	
III	6	12UCSC61	OPERATING SYSTEM	5	25	75	100	15	44	59	5.9	B+	P	A.17	
III	6	12UCSC62	SOFTWARE ENGINEERING	5	25	75	100	18	53	71	7.1	A++	P	A.17	
III	6	12UCSC6P	DOT NET PROGRAMMING LAB	5	40	60	100	40	60	100	10.0	O+	P	A.17	
III	6	12UCSJ61	PROJECT AND VIVA VOCE	5	40	60	100	37	45	82	8.2	D+	P	A.17	
III	6	12UCSO61	ASP.NET PROGRAMMING	3	25	75	100	21	37	58	5.8	B+	P	A.17	
IV	1	12UCSE1P	PC SOFTWARE LAB	1	40	60	100	40	52	92	9.2	O	P	N.14	
IV	1	13UHMN11	FUNDAMENTALS OF TOURISM ADMINISTRATION	1	25	75	100	15	44	59	5.9	B+	P	N.14	
IV	2	12UCSE21	COMPUTER SYSTEM ARCHITECTURE	1	25	75	100	19	46	65	6.5	A+	P	A.15	
IV	2	13UHMN21	FUNDAMENTALS OF HOTEL ADMINISTRATION	1	25	75	100	20	49	69	6.9	A+	P	A.15	
IV	3	12UCSS3P	LINUX PROGRAMMING LAB	2	40	60	100	40	60	100	10.0	O+	P	N.15	
IV	3	12UCSV31	DESKTOP PUBLISHING	1	25	75	100	22	37	59	5.9	B+	P	N.15	
IV	5	12UCSS51	SOFT SKILL TRAINING	1	25	75	100	21	53	74	7.4	A++	P	N.16	
IV	5	12UCSS5P	PHP LAB	1	40	60	100	23	50	73	7.3	A++	P	N.16	
IV	5	12UGAG51	GENERAL APTITUDE	1	--	100	100	--	47	47	4.7	C+	P	N.16	
IV	5	12UVED51	VALUE EDUCATION	1	--	100	100	--	68	68	6.8	A+	P	N.16	
IV	6	12UCSS6P	MAT LAB	2	40	60	100	40	59	99	9.9	O+	P	A.17	
IV	6	12UCSV61	NUMERICAL ABILITY	1	25	75	100	18	32	50	5.0	B	P	A.17	
IV	6	12UESR61	ENVIRONMENTAL STUDIES	1	25	75	100	20	59	79	7.9	D	P	A.17	
V	4	12UEXT4A	HUMAN RIGHTS CLUB	1	100		100	74	--	74	7.4	A++	P	A.16	
EXTRA CREDIT COURSE															
15UEEX1 , 15UEEX2				4											
*** END OF STATEMENT ***															

CURRENT SEMESTER				CUMULATIVE PERFORMANCE			
PART	CREDITS EARNED	CGPA	PART	CREDITS EARNED	CGPA	GRADE	CLASSIFICATION
I	---	---	I	12	6.37	A	I CLASS
II	---	---	II	12	5.97	B+	II CLASS
III	23	7.54	III	100	7.35	A++	I CLASS
IV	4	8.18	IV	15	7.55	D	
V	---	---	V	1	7.40	A++	
			Total	140			

Medium of Instruction : ENGLISH

k. sudha
Signature of the Candidate



(Signature)
(Dr. S. Krishnamurthy)
PRINCIPAL

(Signature)
(Mrs. Pitchaikani Prabakaran)
CONTROLLER OF EXAMINATIONS

Note : Any alteration or overwriting makes the Statement of Marks and Grades invalid.



SRI KALISWARI COLLEGE (Autonomous), SIVAKASI

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(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY, MADURAI)



No. SKC P 647

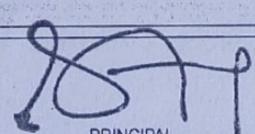
M.Sc.(CS) CONSOLIDATED MARKS AND GRADES

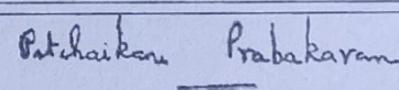
NAME OF THE CANDIDATE SUDHA.K		D.O.B 06/05/1997	REGISTER NO. A7 PCS 004	DATE OF PUBLICATION 07/06/2019
NAME OF THE COURSE M.Sc.(CS)		CENTRE CODE 629	EXAM. M. & YR. APR. 2019	

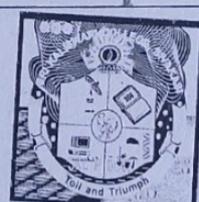
SEMESTER	COURSE CODE	COURSE TITLE	CREDITS	MAXIMUM			MARKS SECURED			GRADE POINT	GRADE	RESULT	MONTH & YEAR
				INT.	EXT.	TOT.	INT.	EXT.	TOT.				
1	16PCSC11	DISCRETE MATHEMATICS	4	25	75	100	23	47	70	7.0	A++	P	N17
1	16PCSC12	DATA STRUCTURES AND ALGORITHMS	4	25	75	100	21	50	71	7.1	A++	P	N17
1	16PCSC13	ADVANCED C AND C++	4	25	75	100	19	51	70	7.0	A++	P	N17
1	16PCSC14	OPERATING SYSTEM	4	25	75	100	18	49	67	6.7	A+	P	N17
1	16PCSC1P	DATA STRUCTURES AND ALGORITHM LAB	4	40	60	100	40	50	90	9.0	O	P	N17
1	16PCSC1Q	ADVANCED C AND C++ LAB	4	40	60	100	37	60	97	9.7	O+	P	N17
2	16PCSC21	ADVANCED JAVA PROGRAMMING	4	25	75	100	18	42	60	6.0	A	P	A18
2	16PCSC22	DATA COMMUNICATION AND NETWORKS	4	25	75	100	20	45	65	6.5	A+	P	A18
2	16PCSC23	RELATIONAL DATABASE MANAGEMENT SYSTEM	4	25	75	100	20	52	72	7.2	A++	P	A18
2	16PCSO23	DATA MINING	4	25	75	100	21	53	74	7.4	A++	P	A18
2	16PCSC2P	ADVANCED JAVA PROGRAMMING LAB	4	40	60	100	32	40	72	7.2	A++	P	A18
2	16PCSC2Q	RDBMS LAB	4	40	60	100	36	55	91	9.1	O	P	A18
3	16PCSC31	WEB TECHNOLOGY	4	25	75	100	20	56	76	7.6	D	P	N18
3	16PCSC32	SOFTWARE PROJECT MANAGEMENT	4	25	75	100	22	52	74	7.4	A++	P	N18
3	15PCFN31	PRACTICAL BANKING	4	25	75	100	20	46	66	6.6	A+	P	N18
3	16PCSO31	NETWORK SECURITY AND CRYPTOGRAPHY	4	25	75	100	21	49	70	7.0	A++	P	N18
3	16PCSC3P	OPEN SOURCE TOOLS LAB	4	40	60	100	40	60	100	10.0	O+	P	N18
3	16PCSC3Q	DOT NET PROGRAMMING LAB	4	40	60	100	38	56	94	9.4	O	P	N18
4	16PCSC41	ADVANCED COMPUTING	4	25	75	100	21	47	68	6.8	A+	P	A19
4	16PCSC42	EMPLOYABILITY SKILLS	4	40	60	100	34	38	72	7.2	A++	P	A19
4	16PCSJ41	PROJECT AND VIVA - VOCE	10	40	60	100	39	54	93	9.3	O	P	A19
*** END OF STATEMENT ***													
CUMULATIVE PERFORMANCE													

Credits Earned (IN CURRENT SEMESTER)	GPA	Credits Earned (IN ALL SEMESTER)	CGPA	Grade	Classification
18	8.28	90	7.78	D	I Class with Distinction
Medium of Instruction : ENGLISH					


Signature of the Candidate


PRINCIPAL


CONTROLLER OF EXAMINATIONS





Sri Kaliswari College (Autonomous)

Affiliated to M.K. University

A.Meenakshipuram Anaikuttam, Sivakasi - 626130



TRANSFER AND CONDUCT CERTIFICATE

T.C No. : 00836

Roll No : 14BCS041

- 1. Name of the Student (in Block letters) : **SUDHA.K**
- 2. Sex : Female
- 3. Name of the Parent / Guardian : V.Krishnan
- 4. Date of Birth as per the Register (in figures and words) : 06-05-1997 (Six May Nineteen Ninety Seven)
- 5. Nationality, Religion & Caste : Indian Hindu Maravar
- 6. Community to which he / she belongs : DNC
- 7. Date of Admission and Class in which admitted : 05-06-2014, First Year B.Sc CS
- 8. Date on which the student left the College : 13-04-2017
- 9. Class in which the student was studying at the time of leaving : Third Year B.Sc CS
- 10. Subject Studied Part I : Tamil
- Part II : English
- Part III : Computer Science
- 11. Whether he/she is qualified for promotion to a higher class : Refer Mark Statement
- 12. Whether the student has paid all the fees or other dues to the College : Yes
- 13. Personal Marks of Identification of the student : a) A mole on the right hand
b) A scar on the right hand
- 14. Date of application for T.C : 13-04-2017
- 15. Conduct and Character : *Good*

Date : 05-05-2017

PRINCIPAL

Principal
SRI KALISWARI COLLEGE
(Autonomous)
SIVAKASI - 626 130



Sri Kaliswari College (Autonomous)

Affiliated to M.K. University

A.Meenakshipuram Anaikuttam, Sivakasi - 626130



TRANSFER AND CONDUCT CERTIFICATE

T.C No.: 03122

Roll No : A7PCS004

1. Name of the Student (in Block letters) : **SUDHA.K**
2. Sex : **Female**
3. Name of the Parent / Guardian : **V.Krishnan**
4. Date of Birth as per the Register (in figures and words) : **06-05-1997 (SIX MAY NINETEEN NINETY SEVEN)**
5. Nationality, Religion & Caste : **Indian Hindu Maravar**
6. Community to which he / she belongs : **DNC**
7. Date of Admission and Class in which admitted : **01-07-2017, First Year M.Sc (CS)**
8. Date on which the student left the College : **27-04-2019**
9. Class in which the student was studying at the time of leaving : **Second Year M.Sc (CS)**
10. Subject Studied Part I :
Part II :
Part III : **Computer Science**
11. Whether he/she is qualified for promotion to a higher class : **Refer Mark Statement**
12. Whether the student has paid all the fees or other dues to the College : **Yes**
13. Personal Marks of Identification of the student :
a) A mole on the right hand
b) A scar on the right hand
14. Date of application for T.C : **27-04-2019**
15. Conduct and Character : **Good**

Date : 27-04-2019

Principal
SRI KALISWARI COLLEGE
 (Autonomous)
 SIVAKASI - 626 130



SRI KALISWARI COLLEGE

(Autonomous, Co-educational, Affiliated to Madurai Kamaraj University, Madurai
Re-accredited (3rd Cycle) with 'A' Grade by NAAC with CGPA of 3.11)

A.Meenakshipuram, Anaikuttam Post,
SIVAKASI - 626 130.

Dr. S. Krishnamurthy, M.Com.,M.Phil.,Ph.D.,MBA,
Principal

Date:20.07.2021

EXPERIENCE CERTIFICATE

This is to certify that **Ms.K.Sudha** is working in our Institution as Assistant Professor in the Department of Computer Applications from 13.06.2019 to till date.



PRINCIPAL

20/7/21

Principal

SRI KALISWARI COLLEGE

(Autonomous)

SIVAKASI - 626 130

आयकर विभाग
INCOME TAX DEPARTMENT



भारत सरकार
GOVT. OF INDIA



स्थायी लेखा संख्या कार्ड
Permanent Account Number Card

HPWPS1755G



नाम/ Name
K SUDHA

पिता का नाम/ Father's Name
KRISHNAN

जन्म की तारीख/ Date of Birth
06/05/1997

K. sudha

हस्ताक्षर/ Signature



04032017

इस कार्ड के खोने / पाने पर कृपया सूचित करें / लौटाएं :

आयकर पैन सेवा इकाई, एन एस डी एल

5 वीं मंजिल, मंत्री स्टर्लिंग, प्लॉट नं. 341, सर्वे नं. 997/8,

मॉडल कालोनी, दीप बंगला चौक के पास,

पुणे-411 016.

*If this card is lost / someone's lost card is found,
please inform / return to :*

Income Tax PAN Services Unit, NSDL

5th floor, Mantri Sterling,

Plot No. 341, Survey No. 997/8,

Model Colony, Near Deep Bungalow Chowk,

Pune - 411 016.

Tel: 91-20-2721 8080, Fax: 91-20-2721 8081

e-mail: tininfo@nsdl.co.in



सत्यमेव जयते

India Driving Licence(Tamilnadu)

Form 7

DOI 20/09/2016

D.L.No : TN84Z20160003328

Name : SUDHA K

S/D/W of : KRISHNAN

Address :

210, ANNA COLONY
THIRUTHANGAL,
SIVAKASI-TK

Temp.Add:

MADURA DRIVING SCHOOL SVK

D.O.B. : 06/05/1997

B.G. :



Punishments:

Licensed to drive throughout India, vehicles of the following descriptions
M/CYCL. WOG 20/09/2016 TN84Z

Non-Transport Veh. Valid upto 19/09/2036



K. Sudha

Signature/L.T.I
of the Holder

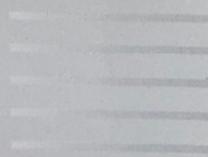
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SRI KALISWARI COLLEGE

(Autonomous, Co-educational, Affiliated to Madurai Kamaraj University, Madurai
Re-accredited (3rd Cycle) with 'A' Grade by NAAC with CGPA of 3.11)

A.Meenakshipuram, Anaikuttam Post,
SIVAKASI - 626 130.



Dr. S. Krishnamurthy, M.Com.,M.Phil.,Ph.D.,MBA,
Principal

Date: 20.07.2021

NO OBJECTION CERTIFICATE

This is to certify that **Ms.K.Sudha**, is working as Assistant Professor
in the Department of Computer Applications in this College.

We have No Objection in permitting her to do Ph.D course under
Part-Time programme in Kalasalingam University, Krishnankovil.



PRINCIPAL
Principal
20/7/21
SRI KALISWARI COLLEGE
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