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

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

APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:16-10-2024

Department	COMPUTER APPLICATIONS	Application No.	20240079
Area of Research	AI AND MACHINE LEARNING FOR CYBERSECURITY	Research Mode	PART TIME

Name :AROKIA SURESH KUMAR

Date of Birth / Age :31-01-1982 / 42 Years

Gender :MALE

Category :BC

e-Mail ID :jarokiam@gmail.com

Mobile :+1 7204021400

Father's/Husband's Name	JOSEPH	Father's/Husband's Occupation	RETIRED BDO
Family Income	130,000 USD	Residental Type	URBAN
Birth Place	DHARMAPURI	Mother Tongue	TAMIL
Religion	CHRISTIAN	Martial Status	SINGLE
Aadhaar No.	827979482903	PAN No.	AIYPA0467F
Physically Challenged	NO	Type of Disability	-

Address for Communication:	Permenant Address:
UNIT 104 11512 TIN CUP DR AUSTIN AUSTIN DISTRICT TEXAS UNITED STATES OF AMERICA Pin-78750	UNIT 104 11512 TIN CUP DR AUSTIN AUSTIN DISTRICT TEXAS UNITED STATES OF AMERICA Pin-78750

Qualification

Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
MASTER OF COMPUTER APPLICATIONS	COMPUTER APPLICATIONS	THIAGARAJAR COLLEGE OF ENGINEERING	2006	8.33	DISTINCTION	REGULAR
BACHELOR OF SCIENCE	COMPUTER SCIENCE	ST.JOSEPHS COLLEGE	2003	77	FIRST CLASS WITH DISTINCTION	REGULAR

Experience

Organization	Designation	Experience From	Experience TO	Work Nature
INFOSYS LTD	TECHNOLOGY LEAD	2006-10-23	2013-10-11	SOFTWARE ENGINEER
HCL AMERICA	TECHNICAL LEAD	2013-10-21	2016-11-18	SOFTWARE ENGINEER
KUKA U.S HOLDINGS LTD	GROUP MANAGER - SALESFORCE	2016-11-21	1970-01-01	SOFTWARE ENGINEER

Payment Details				
Transaction ID	Reference	Date of transaction	Amount	Status
20240079_241021182630	ZICIOQY03G28R5	21-10-2024	600	SUCCESS

<div align="center">

Research Proposal

AI-Driven Framework for Contextual Data Security and Dynamic Obfuscation in Salesforce CRM Environments

</div>

Introduction

Salesforce CRM is widely adopted by organizations for managing customer data, offering **customizable environments** and **sandbox tools** for testing and development. During sandbox refreshes, **sensitive customer data**—such as names, phone numbers, financial information, social security numbers, and health records—are often replicated from production environments. Without **dynamic, AI-driven obfuscation mechanisms**, ensuring the protection of this data in non-production environments is challenging.

Non-production environments typically involve **more users with elevated access**, such as developers, testers, or external consultants, which increases the **risk of data privacy violations**. Additionally, Salesforce's **static and manually configured data sharing and security settings** make it difficult to apply **context-sensitive controls** that align with evolving user roles and regulatory needs. As a result, **inconsistent access management** and **data exposure risks** threaten compliance with regulations like **GDPR.**

This research proposes an **AI-driven framework** to enhance **data security** through **real-time obfuscation** and **adaptive access management**. By using **machine learning** to detect and manage sensitive information dynamically, the framework aims to ensure **regulatory compliance** while safeguarding data across Salesforce's production and sandbox environments.

Problem Statement

The **manual and static methods** currently used for **data obfuscation** in Salesforce sandboxes are **time-consuming, inefficient, and prone to errors**. These limitations make it challenging to ensure that **sensitive information** is appropriately protected during sandbox refreshes. Furthermore, **elevated user access** in non-production environments, including external consultants and testers, increases the **likelihood of data misuse or exposure**.

Salesforce's **default security settings** are not adaptive enough to manage **dynamic access needs** across different roles and contexts. This lack of automation increases the **risk of inconsistent security practices** and misconfigurations, exposing sensitive information to unauthorized users. **Manual security processes** also hinder compliance efforts, making it difficult to meet the **auditability and transparency** requirements of **GDPR**.

The research addresses these issues by proposing a **dynamic, AI-based framework** for automating data obfuscation, managing access intelligently, and ensuring compliance with privacy laws across both **production and sandbox environments**.

Objectives

The goal of this research is to develop an **AI-driven framework** that automates **data obfuscation** and enforces **adaptive access control** within Salesforce CRM environments. Key objectives include:

1. **Automated Detection and Dynamic Obfuscation:**
   - Use **machine learning (ML)** to identify sensitive data (e.g., names, phone numbers, financial information, health records) in **both standard and custom fields**.
   - Implement **context-aware obfuscation techniques** (e.g., masking, encryption, tokenization) that adjust based on **user roles and sandbox environments**.

2. **AI-Powered Adaptive Access Management:**
   - Leverage **AI algorithms** to analyze user behavior and recommend appropriate **access and sharing settings** for customer data.
   - Apply **just-in-time access mechanisms** to limit access to sensitive data only when necessary, reducing the risk of exposure.

3. **Enhanced Security Across Sandbox Environments:**
   - Automate obfuscation processes during **sandbox refreshes** to ensure that all sensitive fields are protected without manual intervention.
   - Monitor access patterns continuously to detect and prevent potential misuse or insider threats in non-production environments.

Methodology

The research will follow a **data-driven approach** with the following steps:

1. **Data Collection and Preparation:**
   - Collect datasets from **multiple Salesforce orgs** using **APIs** and **SOQL queries** while ensuring compliance with privacy regulations.

2. **AI Model Development:**
   - **Sensitive Data Identification:**
     - Train ML models on labeled datasets to recognize **PII** and other sensitive data within both **structured** and **unstructured content**

- o **Behavioral and Contextual Analysis:**
    - Develop algorithms to assess **data sensitivity** and determine appropriate obfuscation levels based on **user roles, access patterns, and compliance requirements**.

3. **Obfuscation and Access Control Framework Design:**
    - o Implement **real-time obfuscation techniques** such as **masking and tokenization** using **Apex and Lightning components**.
    - o Create a **policy engine** that integrates with Salesforce's security model to manage access dynamically based on **AI insights**.

Conclusion

This research aims to **address the limitations of manual and static security practices** in Salesforce CRM by introducing a **dynamic, AI-driven framework**. By automating **data obfuscation** during sandbox refreshes and managing **access intelligently** through AI, the framework will mitigate the **risk of data exposure**, enhance **regulatory compliance**, and improve **operational efficiency**.

The successful implementation of this framework will ensure that **customer data remains protected** across production and non-production environments without compromising Salesforce's **performance and usability**. This research aims to set a **new benchmark in adaptive data security for cloud-based CRM systems**, ensuring that organizations remain **secure, compliant, and agile** in their use of Salesforce CRM.

Anna University

The Syndicate of the Anna University hereby makes known that **AROKIA SURESH KUMAR J** has been admitted to the **DEGREE OF MASTER OF COMPUTER APPLICATIONS** 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 duly appointed examiners to be qualified to receive the same and having been placed by them in the **FIRST CLASS WITH DISTINCTION** at the Examination held in **APRIL 2006.**

Given under the Seal of the University

Chennai 600 025
India
November 2006   Controller of Examinations   Registrar   Vice-Chancellor

THIAGARAJAR COLLEGE OF ENGINEERING

(AN AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

MADURAI-625 015

MASTER OF COMPUTER APPLICATION DEGREE EXAMINATION

GRADE CARD

SL. NO. 83563

Name of the Candidate :	AROKIA SURESH KUMAR, J.	Reg. No. 03Y03
Exam Month & Year	APR. 2006	Dt. of publication 31/05/2006

COURSE CODE	CREDITS	GRADE	M/Y	COURSE CODE	CREDITS	GRADE	M/Y	COURSE CODE	CREDITS	GRADE	M/Y
FIRST SEMESTER				**SECOND SEMESTER**				**THIRD SEMESTER**			
Y11	4	A	N03	Y21	4	C	A04	Y31	4	C	N04
Y12	4	C	N03	Y22	4	A	A04	Y32	4	C	N04
Y13	4	A	N03	Y23	4	C	A04	Y33	4	A	N04
Y14	4	A	N03	Y24	4	B	A04	Y34	4	B	N04
Y15	4	B	N03	Y25	4	C	A04	Y35	4	A	N04
Y16	2	S	N03	Y26	2	S	A04	Y36	2	S	N04
Y17	2	A	N03	Y27	2	S	A04	Y37	2	A	N04

COURSE CODE	CREDITS	GRADE	M/Y	COURSE CODE	CREDITS	GRADE	M/Y	COURSE CODE	CREDITS	GRADE	M/Y
FOURTH SEMESTER				**FIFTH SEMESTER**				**SIXTH SEMESTER**			
Y41	4	B	A05	Y51	4	A	N05	Y61	12	A	A06
Y42	4	B	A05	Y52	4	B	N05				
Y43	4	C	A05	Y53	4	B	N05				
Y44	4	B	A05	Y54	4	C	N05				
Y4N	4	A	A05	Y5G	4	B	N05				
Y46	2	S	A05	Y56	2	S	N05				
Y47	2	S	A05	Y57	2	S	N05				

Medium of Instruction is ENGLISH

Enrolment No. : MCA785

Semester	I	II	III	IV	V	VI
GPA	8.58	8.00	8.25	8.33	8.33	9.00
Credits Registered	24	24	24	24	24	12
Credits Earned	24	24	24	24	24	12
TotalCredits Earned	132					
CGPA			8.36			
Class Obtained			FIRST CLASS WITH DISTINCTION			

	FIRST SEMESTER		SECOND SEMESTER		THIRD SEMESTER
Y11	Discrete Structures	Y21	Structured System Analysis & Design	Y31	Statistical & Numerical Methods
Y12	Financial Management			Y32	Design And Analysis Of Algorithms
Y13	Digital Systems	Y22	System Software	Y33	Data Base Management System - Case Studies
Y14	Problem Solving Using C	Y23	Data Structures		
Y15	Computer Organization	Y24	Object Oriented Programming In C++	Y34	Operating System
Y16	Digital Systems Lab	Y25	Database Management Systems	Y35	Java Programming
Y17	Unix & C Programming Lab	Y26	System Software And Data Structures Lab	Y36	Rdbms Laboratory
		Y27	Visual Programming Lab	Y37	Algorithm Analysis And Design Laboratory

	FOURTH SEMESTER		FIFTH SEMESTER		SIXTH SEMESTER
Y41	Object Oriented Analysis And Design	Y51	Computer networks	Y61	Project Work And Viva Voce
Y42	Computer Graphics	Y52	Operations research		
Y43	Computer Communication	Y53	Animation using uml and vrml		
Y44	Software Engineering	Y54	Internet programming		
Y4H	Electronic Commerce(E)	Y5B	Network security(e)		
Y4N	Principles Of Compiler Design(E)	Y5G	Datamining and warehousing(e)		
Y46	Java Programming Lab	Y5M	Enterprise resource planning(e)		
Y47	Computer Graphics Lab.	Y56	Computer networks lab		
		Y57	Internet programming lab		

CONDITIONS

1. Any alteration or overwriting makes this statement of marks invalid.
2. Any discrepancy in the above entries must be brought to the notice of the CONTROLLER OF EXAMINATIONS immediately.

Controller of Examinations
Date : 01/06/2006

Procedure for the award of Grade & Classification :

Range of total marks	Letter Grade	Grade Points
90 - 100	S	10
80 - 89	A	9
70 - 79	B	8
60 - 69	C	7
50 - 59	D	6
0 - 49	U	0
INCOMPLETE	I	0
WITHDRAWAL	W	0

For the award of	CGPA to be earned
First Class with Distinction	not less than 8.0
First Class	not less than 6.5
Second Class	less than 6.5

"U"   denotes failure in the course.

"I"   denotes incompletion of the semester and hence prevention
       from writing End-Semester examination.

"W"   denotes withdrawal from the Examination.

$$\text{GPA (Grade Point Average)} = \frac{\text{Sum of (Credits} \times \text{Grade Point)}}{\text{Sum of Credits}}$$

CGPA will be calculated in a similar manner,
considering all the courses enrolled from first semester.
"U", "I" and "W" grades will be excluded for calculating
GPA and CGPA.

GPA	-	Grade Point Average
CGPA	-	Cumulative GPA
M	-	Month
Y	-	Year
A	-	April
N	-	November
J	-	Jun / July
AA	-	Absent

LF :

THIAGARAJAR COLLEGE OF ENGINEERING

(An Autonomous Institution Affiliated to Anna University)

MADURAI - 625 015 (INDIA)

Sl.No. **18127** **TRANSFER CERTIFICATE** Roll No. MCA-785.

1. Name of the Student : J. Arokia Suresh Kumar

2. Nationality, Religion : Indian, Christian

3. Community & Caste : BC - Yadhava

4. Date of Birth (inwords) as entered in Admission Register : } 31-01-82 (Thirtyfirst Jan. Eighty two)

5. Class in which the student was studying at the time of leaving (in words) } M. C. A. VI Semester

6. Date of admission or promotion to that class (the year to be entered in words) } 30-06-03.

7. Whether qualified for promotion to a higher class } Refer to Mark Sheet

8. Whether the student has paid all the fees due to the college } Yes.

9. Date on which the student actually left the college } 26-05-06

10. Date on which application for transfer certificate was made by the student or parent / guardian } 26-05-06

11. Reason for his / her leaving : Course Completed.

12. Date of Transfer Certificate : 26-05-06

for PRINCIPAL

HCL AMERICA, INC.

(A subsidiary of HCL TECHNOLOGIES LTD.)

330 Potrero Avenue, Sunnyvale, California 94085 U.S.A.

Tel: 408 733 0480 Fax: 408 733 0482

www.hcltech.com

www.hcl.in

January 16, 2017

To Whom It May Concern

This letter is to confirm that Mr. Arokia Suresh Kumar Joseph was employed full-time by HCL America Inc. as a professional Technical Lead from October 16, 2013 to November 18, 2016. I am the GROUP TECHNICAL MANAGER at HCL America and I am personally familiar with Mr. Joseph's professional qualifications and experience while he was at HCL America.

In this role, Mr. Joseph performed the following duties:

- Gathered and prepared technical requirements.
- Designed and developed batch process for Event data integration between Salesforce and Certain;
- Designed custom user interfaces using Visual Force components;
- Provided technical and functional documents;
- Created detailed design for ECI Application and integration with business objects reports;
- Administered and configured the salesforce.com CRM and Apttus Instances applications including technical solution design, deployment, and development of Force.com applications and interfaces on the Salesforce platform;
- Provided end-user training and technical support;
- Designed and executed a common services framework;
- Delivered applications using Scrum Agile Development Process;
- Conducted systems tests, documented test results, and developed client presentations;
- Designed and developed SOA interfaces using Layer 7 technologies, Oracle Service Bus 11g, and Oracle SOA Suite 11g.
- Created reusable components using Apex and Visualforce components;
- Designed testing procedures and coordinated testing to identify problems and solutions;
- Implemented Web Services using Java technologies;
- Communicated and collaborated with global development teams;
- Prepared high level and detailed design for migrating EIC application from Lightweight to Enterprise Org.; and
- Implemented ETL integration with Salesforce applications using IBM Data stage.
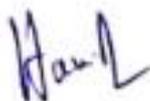
Regards,

Harsh Kapoor,

GROUP TECHNICAL MANAGER.

HCL

Infosys®
POWERED BY INTELLECT
DRIVEN BY VALUES

11-Oct-13

Relieving Letter

To Whom It May Concern:

This is to confirm that **Mr. Arokia Suresh Kumar Joseph** was employed with Infosys Limited from October 23rd 2006 through October 11th 2013.

His role title at the time of his separation from the company was Technology Lead.

We wish Mr. Arokia Suresh Kumar Joseph good luck in his future endeavors.

Sincerely,

Lisa Kidd
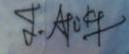AVP - Americas HR

आयकर विभाग

INCOME TAX DEPARTMENT

AROKIA SURESH KUMAR

JOSEPH SANTIAGO

31/01/1982

Permanent Account Number

AIYPA0467F

Signature

भारत सरकार

GOVT. OF INDIA

भारत सरकार

04122006

இந்தியத் தேர்தல் ஆணையம்

ELECTION COMMISSION OF INDIA

AUO2017713

பெயர்: ஆரோக்கிய சுரேஷ் குமார்

Name: Arokia Suresh Kumar

தந்தையின் பெயர்: ஜோசப்

Father's Name: Joseph

பாலினம் / Gender: ஆண் / Male

பிறந்த தேதி / வயது:

Date of Birth / Age: 31-01-1982

e-EPIC - மின்னணு வாக்காளர் புகைப்பட அடையாள அட்டை

சான்றிதழ் எண்:
Certificate No.

மாவட்ட குறியீடு எண்:
District Code: | 0 5
வட்ட குறியீடு எண் :
Taluk Code: | 0 1
கிராமக் குறியிடு எண் :
Village Code : | 0 3u

சாதிச்சான்றிதழ்
COMMUNITY CERTIFICATE

244808

_____ மாவட்டம் _____ வட்டம்

_____ கிராமம் / நகரம், திரு / திருமதி / செல்வன் /

செல்வி _____ , தகப்பனார் /

கணவர் பெயர் _____ , _____

வகுப்பைச் சார்ந்தவர். அரசு (நிலை) ஆணை எண். 1564, சமுக நலத்துறை, நாள்

30-7-85 வரிசை எண் _____ படி பிற்பட்ட பிரிவினைச் சார்ந்தவர் என

சான்றளிக்கப்படுகிறது.

This is to Certify that _Anokie Sunash Kumar_ Son/Daughter of

S. Joseph of _Dharmapuri_ Village/Town

Dharmapuri Taluk _Dharmapuri_ District of the State of

Tamil Nadu belongs to _Christian Yadhav_ Community, which is recognised

as a Backward Class as per Government Orders (Manuscript Series) No. 1564,

Social Welfare Dept., dated 30-7-85 vide Serial No. _144_

2. திரு / திருமதி / செல்வன் / செல்வி _____

என்பவரும் அவருகுடைய குடும்பத்தினரும் தமிழ்நாட்டில் _____

மாவட்டத்தில் _____ வட்டத்தில் _____

கிராமத்தில் / நகரத்தில் வசித்து வருகிறார்கள் என சான்றளிக்கப்படுகிறது.

2. It is certified that _Anokie Sunash Kumar_ and his/her family ordinarily

reside(s) at _Dharmapuri_ Village/Town _Dharmapuri_

Taluk _Dharmapuri_ District of Tamil Nadu.

முத்திரை:
Seal:

கையொப்பம்:
Signature:

நாள்:
Date:

தனி எழுத்துக்களில் பெயர்
Name in Capital Letters:

பதவிப் பெயர்:
Designation:

B. SATHIYANARAYANAN,
ZONAL DEPUTY TAHSILDAR,
DHARMAPURI.

பாரதிதாசன் பல்கலைக்கழகம்
BHARATHIDASAN UNIVERSITY

(Established by the Government of Tamil Nadu in 1982; Recognized by UGC under 2f and 12B of UGC Act;
Member, Association of Indian Universities and Association of Componwealth Universities, Accredited by NAAC with 'A' Grade)

அறிவியல் புலம்
FACULTY OF SCIENCE

பாரதிதாசன் பல்கலைக்கழக ஆட்சிக் குழு ஏப்ரல் 2003 ஆம் ஆண்டு புனித ஆசையப்பர் தன்னாட்சிக் கல்லூரி, திருச்சிராப்பள்ளி நடத்திய கணிப்பொறியியல் தேர்வில் ஜோ. ஆரோக்கிய சுரேஷ் குமார் என்பவர் தனிச்சிறப்புடன் முதல் வகுப்பில் தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள் சான்றளித்தபடி அறிவியல் இளையர் என்னும் பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the **BHARATHIDASAN UNIVERSITY** *hereby makes known that* **J. AROKIA SURESH KUMAR** *has been admitted to the Degree of* **BACHELOR OF SCIENCE,** *having been certified by duly appointed Examiners to be qualified to receive the same in* **COMPUTER SCIENCE** *at the Examination held in* **APRIL 2003** *and placed in* **FIRST CLASS WITH DISTINCTION** *through the* ST. JOSEPH'S COLLEGE (Autonomous), TIRUCHIRAPPALLI *of the University.*

Given under the seal of the University.

திருச்சிராப்பள்ளி
Tiruchirappalli
நாள் : 2nd September 2003
Dated :

பதிவாளர் Registrar   துணைவேந்தர் Vice-Chancellor

A 037547 ISSUED ON : 1 5 SEP 2006 கி.ப.