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:02-10-2025

Department	COMPUTER SCIENCE AND ENGINEERING	Application No.	2025010451
Area of Research	AIML	Research Mode	PART TIME

Name :VAMSHIDHAR REDDY MORUSU

Date of Birth / Age :01-01-1980 / 45 Years

Gender :MALE

Category :OC

e-Mail ID :morusu.v@gmail.com

Mobile :+1 603 692 8776

Father's/Husband's Name	ADI NARAYANA REDDY MORUSU	Father's/Husband's Occupation	RT. CHEIF MANAGER OF BANK OF MAHARASHTRA
Family Income	2400000	Residental Type	RURAL
Birth Place	RAICHUR	Mother Tongue	TELUGU
Religion	HINDU	Martial Status	MARRIED
Aadhaar No.	1223457388Y27826278	PAN No.	1544362788
Physically Challenged	NO	Type of Disability	-

Address for Communication:
310 B BLOCK SLV FLORA
NEAR MUNESHWARA SWAMI TEMPLE
HONGASANDRA. BANGALORE
BANGALORE DISTRICT
KARNATAKA
INDIA
Pin-560068

Permenant Address:
310 B BLOCK SLV FLORA
NEAR MUNESHWARA SWAMI TEMPLE
HONGASANDRA. BANGALORE
BANGALORE DISTRICT
KARNATAKA
INDIA
Pin-560068

Qualification

Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode

Experience

Organization	Designation	Experience From	Experience TO	Work Nature
USB	AVP	2020-01-01	2025-10-01	

Payment Details

Transaction ID	Reference	Date of transaction	Amount	Status
2025010451_251028190133	BICIJ0G10MY8RN	28-10-2025	600	SUCCESS

AIML PhD Research Proposals
in Fintech Domain

Vamshidhar R Morusu

Option 1:

Blockchain-Enhanced Homomorphic Encryption for Privacy-Preserving Tokenized Assets in FinTech

Proposing a novel integration of FHE with blockchain technologies to secure tokenized asset transfers in FinTech, leveraging 2025 PET advancements to ensure privacy and scalability in tokenized financial ecosystems

Option 2:

Energy-Efficient Homomorphic Encryption Protocols for Mobile FinTech Applications

Advancing lightweight FHE algorithms for mobile FinTech platforms, integrating PETs to enable secure, on-device financial computations, such as encrypted budgeting or loan processing, with minimal energy overhead.

Option 3:

Quantum-Inspired Reinforcement Learning Algorithms for High-Dimensional ESG Portfolio Optimization

Develops on quantum-inspired RL techniques to solve high-dimensional dynamic portfolio problems in ESG investing, improving scalability and efficiency.

BOSTON UNIVERSITY

THE TRUSTEES UPON THE RECOMMENDATION OF THE FACULTY OF THE

METROPOLITAN COLLEGE

HEREBY CONFER UPON

Vamshidhar Reddy Morusu

THE DEGREE OF

MASTER OF SCIENCE
COMPUTER INFORMATION SYSTEMS
SUBCONCENTRATION: DATA ANALYTICS

WITH ALL THE HONORS, RIGHTS, PRIVILEGES AND OBLIGATIONS
PERTAINING TO THAT DEGREE.
IN TESTIMONY WHEREOF THIS DIPLOMA IS CONFERRED AT BOSTON, MASSACHUSETTS,
THIS TWENTY-FIFTH DAY OF AUGUST, 2022.

DEAN

PRESIDENT

Reg.No : 12RABCA1022
Centre Code : 1349

No.PRA 001183

பெரியார் பல்கலைக்கழகம்
PERIYAR UNIVERSITY

FACULTY OF SCIENCE

The Syndicate of the **PERIYAR UNIVERSITY** hereby makes known that

VAMSHIDHAR REDDY M _____ has been

admitted to the Degree of_____ **BACHELOR OF COMPUTER APPLICATIONS**

having been certified by duly appointed Examiners to be qualified to receive the same in

COMPUTER APPLICATIONS

and was placed in _____ **FIRST CLASS**

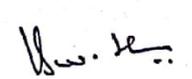at the Examination held in_____ **DEC 2014** _____ by Periyar University.

Given under the Seal of the University

Dated : 14-10-2016
Salem - 636011,Tamil Nadu,India.

Controller of Examinations   Registrar   Vice-Chancellor

A 0064020

DIPLOMA

Reg. NO.   067821-6

This is to Certify that

VAMSHIDHAR REDDY M

having   undergone   the   prescribed   course   of
studies   for   a   period   of   three   years   in

ELECTRONICS & COMMUNICATION ENGG

has   been   declared   to   have   passed   in   FIRST
class   in   the   Final   Examination   held   in   the
month   of   MAY   in   the   year 2000

In   testimony   whereof   this   Diploma   in
ELECTRONICS & COMMUNICATION ENGG
is   awarded   with   the   privilege   to   use   the
title   D E & C E

Chairman,
Board of Technical Examinations and
Director of Technical Education

Secretary,
Board of Technical Examinations,
Bangalore.

2/93 - 1,00,000

446-033

Date of Eligibility: 28th JUNE 2000

Boston University Unofficial Transcript

Boston University Office of the University Registrar

881 Commonwealth Avenue
Boston, Massachusetts 02215

DATE PRINTED: 07/01/2024
Page 1 of 2

STUDENT NAME	IDENTIFICATION NUMBER	DATE OF BIRTH
Vamshidhar Reddy Morusu	**XXXX**	**January 3**

Academic Program History

Program: May 23, 2017:	Metropolitan College Active in Program		
May 23, 2017:	M.S. Computer Information Systems Major		
	Data Analytics Concentration		

Degrees Awarded
Degree: Master of Science
Confer Date: Aug 25, 2022
Major: Computer Information Systems
Sub-concentration: Data Analytics

Beginning of Graduate Record

Summer 2 2017

Course	Title	Credits	Grade	Grade Points
METCS 520S	INFO STRUCTURES	4.0	A	16.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	4.00 Term Totals	4.0		16.00
Cum GPA	4.00 Cum Totals	4.0		16.00

Fall 2017

Course	Title	Credits	Grade	Grade Points
METCS 546	QUAN METH IS	4.0	A	16.0
METCS 625	BUS DATA COM NW	4.0	A-	14.8
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.85 Term Totals	8.0		30.80
Cum GPA	3.90 Cum Totals	12.0		46.80

Spring 2018

Course	Title	Credits	Grade	Grade Points
METCS 669	DB DES IMP BUS	4.0	B	12.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.00 Term Totals	4.0		12.00

Cum GPA	3.68 Cum Totals	16.0		58.80

Fall 2018

Course	Title	Credits	Grade	Grade Points
METCS 544	FOUND ANALYTICS	4.0	B+	13.2
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.30 Term Totals	4.0		13.20
Cum GPA	3.60 Cum Totals	20.0		72.00

Summer 1 2019

Course	Title	Credits	Grade	Grade Points
METCS 699S	Data Mining	4.0	B	12.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.00 Term Totals	4.0		12.00
Cum GPA	3.50 Cum Totals	24.0		84.00

Spring 2020

Course	Title	Credits	Grade	Grade Points
METCS 688	Web Mining and Graph Analytics	4.0	B	12.0
Course Topic:	WEB ANALYT MIN			
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.00 Term Totals	4.0		12.00
Cum GPA	3.43 Cum Totals	28.0		96.00

Spring 2021

Course	Title	Credits	Grade	Grade Points
METCS 682	INFO SYS ANALYS	4.0	B	12.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.00 Term Totals	4.0		12.00

![Boston University logo]

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Boston, Massachusetts 02215

DATE PRINTED: 07/01/2024
Page 2 of 2

STUDENT NAME	IDENTIFICATION NUMBER	DATE OF BIRTH
Vamshidhar Reddy Morusu	**XXXX**	**January 3**

Cum GPA	3.38	Cum Totals	32.0	108.00

Summer 1 2021

Course	Title	Credits	Grade	Grade Points
METCS 782S	IT STRAT & MGMT	4.0	W	0.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	0.00 Term Totals	0.0		0.00

Cum GPA	3.38	Cum Totals	32.0	108.00

Summer 2 2021

Course	Title	Credits	Grade	Grade Points
METCS 555S	DATA ANALYS VIS	4.0	W	0.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	0.00 Term Totals	0.0		0.00

Cum GPA	3.38	Cum Totals	32.0	108.00

Fall 2021

Course	Title	Credits	Grade	Grade Points
METCS 782	IT STRAT & MGMT	4.0	A-	14.8
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	3.70 Term Totals	4.0		14.80

Cum GPA	3.41	Cum Totals	36.0	122.80

Spring 2022

Course	Title	Credits	Grade	Grade Points
METCS 555	DATA ANALYS VIS	4.0	F	0.0
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	0.00 Term Totals	0.0		0.00

Cum GPA	3.07	Cum Totals	36.0	122.80

Summer 2 2022

Course	Title	Credits	Grade	Grade Points
METCS 555S	DATA ANALYS VIS	4.0	B-	10.8
		Cumulative Credit Earned		Cumulative Grade Points
Term GPA	2.70 Term Totals	4.0		10.80

Cum GPA	3.04	Cum Totals	40.0	133.60

Graduate Career Totals

Cumulative Credits Earned:	40.0
Cumulative Grade Points:	133.60

End of Graduate Record

Boston University

THE TRUSTEES UPON THE RECOMMENDATION OF THE FACULTY OF THE

METROPOLITAN COLLEGE

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THE DEGREE OF

MASTER OF SCIENCE

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WITH ALL THE HONORS, RIGHTS, PRIVILEGES AND OBLIGATIONS
PERTAINING TO THAT DEGREE.

IN TESTIMONY WHEREOF THIS DIPLOMA IS CONFERRED AT BOSTON, MASSACHUSETTS,

THIS TWENTY-FIFTH DAY OF AUGUST, 2022.

Robert A. Brown
PRESIDENT

Dean

Vamshidhar Morusu

Cloud, BigData, IoT, Embedded Systems

📞 +1 603-692 8776   ✉ morusu.v@gmail.com   📍 Texas, United States

in www.linkedin.com/in/vamshidhar-morusu

www.stackoverflow.com/users/6644876/vamshidhar-morusu

SKILLS

Programming

C, Java, Scala, Python, R, Swift

Cloud and Containerisation

Microsoft Azure, AWS, GCP, Kubernetes, Docker

BigData and Apache Projects

Spark, Hive, Kafka, Airflow, YARN, Zookeeper, Sqoop,

Kernel and Device Drivers

Kernel Porting to Intel and ARM processors, SD/SDIO/MMC drivers, USB drivers, TouchPad drivers, Firmware and Bootloaders.

CI/CD and Build Tools

GitLab, GitHub, Jenkins, Cloudbees, Autosys, Maven, Gradle, SBT, make

Databases

Postgres, Snowflake, Cassandra, Hive, MySQL, Oracle, MS SQL

Web Technologies

Spring, Hibernate, JSP, JavaScript, Microservices.

Mobile Technologies

Android, iOS, MeeGo, Native and Hybrid(HTML5) mobile application.

Project Management

Agile, Waterfall, Kanban, Risk management, RFP, RFC

ABOUT ME

I have over a decade of experience in cloud computing, data engineering, and software development, having worked across industries such as banking, retail, and home automation. My roles have ranged from Senior Software Developer to Technology Architect, with extensive expertise in building scalable data processing platforms, implementing big data solutions, and driving cloud migration strategies. I possess advanced skills in open-source tools like Spark, Kafka, Hadoop, and Airflow, alongside proficiency in developing APIs and performance tuning frameworks. My professional journey has involved delivering end-to-end system integrations, streamlining ETL processes on cloud infrastructures like AWS and Azure, and consistently enhancing frameworks for better security and performance. I hold a Master's degree in Data Analytics from Boston University as well as a Bachelor's degree in Computer Applications from Periyar University.

My career objective is to lead cutting-edge cloud projects that optimize enterprise data workflows while solving real-world challenges through data-driven solutions. With several significant contributions including vulnerability fixes for open-source projects and supporting enterprise data access structures, I aim to bring innovative solutions to the next phase of my career.

PROFESSIONAL EXPERIENCE

2020 – Till Date

US Bank
AVP - Senior Software Engineer

- Engineered an automated framework for Customer360 platform artifacts, reducing manual effort by 75% and improving accuracy by 95%
- Spearheaded critical feature enhancements and security upgrades across multiple versions of DDA Inquiry web tool.
- Implemented a robust Batch Data Processing framework integrated with Azure Synapse Analytics, enabling efficient handling of large-scale data workloads and leveraging cloud-based analytics capabilities27. This solution optimizes resource utilization, enhances scalability, and supports complex ETL processes while seamlessly connecting with Azure Synapse's SQL pools and Spark engines for comprehensive data transformation and analysis
- Developed proof-of-concept projects demonstrating RESTful API integration with Customer360 data and real-time data ingestion, reducing data latency by 40%
- Contributed to open-source projects (Hadoop, Jackson, Spark), resolving critical vulnerabilities in Spark, Airflow, and GitSync images
- Orchestrated GitLab pipelines, CI/CD workflows, and repositories for multiple projects, improving deployment efficiency by 60%
- Leveraged expertise in Java, Python, SQL, RESTful APIs, and big data technologies to drive innovation and efficiency in data management solutions

EDUCATION

Master of Science - Data Analytics
Boston University
2023

Bachelor of Science
Periyar University
2014

Diploma in Electronics & Communication Engineering
Board of Technical Education , India.
2000

AWARDS

BestIn US(US Bank)- Bronze, Silver, Gold.
Quality Contributor, Spot award (iWave)
Best Team Presenter (Syntel)

CERTIFICATIONS

AZ900, ISC2 CC, Databricks AI

2016 – 2020

Visual Consultants Inc.
Technical Architect
Clients - Neiman Marcus, Lutron

- Spearheaded design and implementation of customer-facing IoT software, integrating mobile apps with embedded devices and cloud systems. Improved mobile app performance by reducing load time by 40% and increasing user adoption by 25% through optimized cloud integration and intuitive UX design.
- Developed and maintained data pipelines for customer-centric data integration, generating UCIDs, product recommendations and personalization models consumed through APIs. Optimized EMR performance and UCID clustering, reducing data processing time by 30%.
- Led cloud migration efforts, automating scripts to transfer enterprise data to AWS Cloud with minimal downtime. Successfully delivered a major cloud migration project 3 weeks ahead of schedule, resulting in 20% cost savings.
- Developed a cloud-based PII hashing framework in PySpark for secure data delivery to the Data Science team. Implemented Airflow DAGs and EMR PySpark workflows for feed ingestion and complex business processing.
- Architected loosely coupled, resilient, and secure software systems, ensuring scalability and robustness.
- Provided technical leadership and mentorship, fostering innovation and continuous improvement within the development team.
- Conducted research on emerging technologies, focusing on IoT, cloud computing, and smart home/building advancements. Led a team that delivered a flagship IoT project 2 months ahead of schedule, resulting in a 15% increase in customer satisfaction.

2016 – 2012

Synapse - Quest
Technical Manager
Client - Cisco Systems

- Lead advanced infrastructure software design and development using C/Python, collaborating with hardware teams to seamlessly integrate solutions and optimize performance.
- Architect and implement comprehensive networking solutions across all layers, leveraging expertise in C, Java, and scripting languages for diverse network equipment systems.
- Spearhead distributed platform and system software development, including board bring-up, device drivers, file systems, and kernel programming, showcasing deep Linux and network resource management knowledge.
- Drive platform development focusing on CPU/Memory Management/IO and Virtualization for embedded systems, while conducting thorough testing and debugging to ensure robust, reliable solutions.
- Oversee development of innovative network features and architectures, managing multiple projects in a fast-paced environment and demonstrating strong analytical and problem-solving skills.
- Provide technical leadership, mentoring junior developers and promoting best practices in C/Java programming and embedded platform development across the team.

2011 – 2012

Syntel
Technical Architect

- Lead and manage development teams in creating cutting-edge mobile applications using HTML5, React Native, and native technologies (Swift for iOS, Kotlin/Java for Android).
- Architect robust mobile solutions, focusing on system integration, backend infrastructure, APIs while ensuring optimal performance, security, and scalability.
- Drive architectural decisions and provide strategic direction for mobile projects, implementing best practices in app security, data encryption, authentication, and performance optimization.
- Mentor and foster technical growth within engineering teams, promoting a collaborative culture and driving innovation in mobile application development.
- Manage RFP/RFC processes, coordinating proposal development, assembling teams, and ensuring high-quality submissions that align with project requirements and business objectives.

2007 – 2011

iWave Systems Technologies
Project Lead

- Led core arm64 Linux Kernel team, maintaining upstream Linux port, reviewing code on public mailing lists, and upstreaming improvements for modern arm64 hardware performance.
- Expertise in Linux OS development, including internals, file systems, process management, memory management, and virtualization; proficient in kernel patching, debugging, and device driver development.
- Spearheaded hardware integration projects, including board bring-up from BSP, supporting various drivers (Touch, Wi-Fi, USB, SD, Ethernet, LCD), and Android porting onto Intel Atom (x86) platforms.
- Designed and implemented specialized drivers (SPO2, RFID reader) and integrated diverse modules (GPS, Card Reader, Signature Pad, Camera) for embedded systems.
- Drove CI/CD and process automation initiatives, enhancing development workflows and improving code quality across projects.
- Actively contributed to open-source projects, investigating and upstreaming support for new architecture features in the Linux kernel.

2003 – 2007

MindStones Solutions
Software Engineer

- Engineered a gateway for managing semi-distributed wireless devices, enabling control of device-level features (storage, battery status, OTA firmware updates) and interconnected devices via WDM nodes. Integrated secure OTA protocols inspired by MDM best practices for remote device management.
- Implemented HeartBeat-based device discovery and shortest-path algorithms (e.g., Dijkstra/Floyd-Warshall) to minimize latency in device-to-device communication. Leveraged Java concurrency models for real-time parsing of discovery packets.
- Indus Mote Programming Language: Created a domain-specific language (DSL) for ubiquitous computing, prioritizing lightweight syntax and event-driven constructs. Integrated with Java via ANTLR for parsing and code generation.
- Built core logic using JDBC and MySQL to manage device metadata, optimizing queries with indexing and connection pooling. Designed schemas for device hierarchies, status histories, and firmware versions, ensuring ACID compliance.
- Combined JNI, C, and Java to interface with embedded hardware (Indus Mote), ensuring compatibility with Android/Linux systems.
- Applied IoT device lifecycle management principles (onboarding, configuration, OTA updates) aligned with Ubiquitous device frameworks.
- Prioritized low-latency algorithms and thread-safe JNI practices to meet real-time device management requirements.

2001 – 2002

Flash Infotech Pvt Ltd
Software Engineer

- Develop and deliver comprehensive training programs on various software applications, programming languages (C, Java, Visual Basic), and systems, tailoring content to diverse audience needs and learning styles.
- Design and create engaging training materials including manuals, e-learning modules, and interactive tutorials, while continuously updating content to reflect latest software features and industry trends.
- Facilitate interactive hands-on technical working sessions, allowing participants to practice software applications in real-time. Guide learners through practical exercises, troubleshoot issues, and provide immediate feedback to reinforce learning and skill development.

2000 – 2001

Jindal Stell & Power Ltd.
Trainee

- Participate in programming and modifying Programmable Logic Controller(PLC) for process automation and optimization using industry-standard software.
- Collaborate with cross-functional teams to integrate PLC systems with other plant control and data acquisition systems.
- Assist in documenting PLC programs, creating backups, and maintaining version control for critical control systems.

आयकर विभाग   भारत सरकार

INCOME TAX DEPARTMENT   GOVT. OF INDIA

MORUSU VAMSHIDHAR REDDY

ADINARAYANA MORUSU REDDY

03/01/1980

Permanent Account Number

AIOPR6004P

ಭಾರತ ಚುನಾವಣಾ ಆಯೋಗ
ಗುರುತಿನ ಚೀಟಿ
ELECTION COMMISSION OF INDIA
IDENTITY CARD

UHN6665228

ಮತದಾರರ ಹೆಸರು : ವಂಶಿಧರ್ ರೆಡ್ಡಿ ಮೊರುಸು

Elector's Name : Vamshidhar Reddy Morusu

ತಂದೆಯ ಹೆಸರು : ಆದಿನಾರಾಯಣ ರೆಡ್ಡಿ ಮೊರುಸು

Father's Name : Adinarayana Reddy Morusu

ಲಿಂಗ / Sex : ಪುರುಷ/ Male

ಜನ್ಮದಿನಾಂಕ/Date of Birth : 03/01/1980

CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./Ms./Mrs. _Vamshidhar Reddy Marusu_ is employed as _Senior Software Engineer_ (Designation) in the _TOS- Platform Product management_ (Department/Division Name) of _U.S Bank a major financial Institution_ (Institution/Industry Name).

We have no objection in forwarding his/her application for the Ph.D. Research Programme.
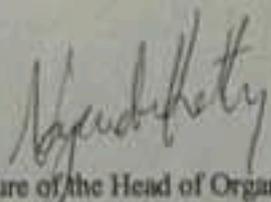
FOR FULL TIME:

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: 25ᵗʰ Oct 2025.

Signature of the Head of Organization with office seal