



Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)



School of Computing

Department of
Information Technology

Magazine

Enightbytes

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2024

☎ 1800 212 7669

🌐 www.veltech.edu.in

📍 No.42, Avadi-Vel Tech Road, Vel Nagar, Avadi, Chennai-600 062.

INSTITUTION LEADERSHIPS



Col. Prof. Vel. Dr. R. Rangarajan
B.E. (Elec), B.E. (Mech), M.S. (Auto), D.Sc.,
Founder President & Chancellor



Dr. Sagunthala Rangarajan
MBBS.,
Foundress President



Mrs. Rangarajan Mahalakshmi Kishore
B.Tech, M.Tech, MBA(UK),
Chairperson & Managing Trustee



Prof. S. Salivahanan
Vice Chancellor

About Department



Dr. Srinivasa Rao V
Dean - School of Computing



Dr. Visumathi
HoD - Information Technology

Vision and Mission of the Department



Vision

To evolve as a Center of Academic Excellence by providing globally standard education and research in the field of Information Technology and to mould young graduates into competitive, innovative, self-disciplined and visionary computer professionals while maintaining a commitment to diversity and humanity.



Mission

- M1:** To design and update an outcome-based curriculum that equips students with modern computing knowledge to solve real-world problems.
- M2:** To strengthen conceptual understanding and analytical capability through innovative, ICT-enabled and learner-cantered pedagogical practices.
- M3:** To build a vibrant research environment that enables faculty and students to advance innovation in computing.
- M4:** To nurture ethical, competent, and industry-ready professionals capable of pursuing diverse career paths and contributing responsibly to society.

Programme Educational Objective (PEOs)

After 3-5 years from the year of graduation, our graduates will,

PEO1

Formulate and apply mathematical, scientific, and engineering principles to solve problems in the Information Technology domain.

PEO2

Leverage modern IT technologies to address societal expectations and fulfill professional responsibilities.

PEO3

Showcase problem-solving ability along with strong communication, teamwork, leadership, and ethical values to work effectively in the Information Technology domain.

PEO4

Pursue higher studies at reputed institutions globally, build careers in IT core companies and commit to lifelong learning.

Program Outcomes (POs)

On successful completion of the Programme, the Graduates will be able,

PO1

Engineering Knowledge: Apply knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2

Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3

Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

PO4

Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5

Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities.

PO6

The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO7

Environment and Sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9

Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10

Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large.

PO11

Project Management and Finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team.

PO12

Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes (PSOs)

PSO1

Acquire the basic knowledge of algorithms and recent tools for developing real-time software solutions related to the IT industry.

PSO2

Apply suitable methodologies and use innovative ideas to solve real-world complex problems in society.

PSO3

Be a competitive employee in the industry or an IT entrepreneur to face local and global challenges.

Department Highlights

The Department of Information Technology (IT) established in 1997, has evolved into a dynamic academic and research community with a student strength of 190. The department is supported by a dedicated team of 15 faculty members, whose academic expertise, research contributions, and industry experience foster excellence in teaching, innovation, and scholarly pursuits. With state-of-the-art laboratories and modern infrastructure, the department provides an enriching environment for learning, research, and technological advancement. Students actively engage with professional bodies such as CSI, IEEE-CS, ACM, and ISTE, gaining valuable professional exposure and a global perspective. The department's strong industry connect is reflected in its successful placements, with graduates securing career opportunities in leading organizations including Hexaware, TCS, Accenture, Capgemini, Infosys, LTI Mindtree and sprintM. The semester was marked by the research paper presentations, coding competitions, guest lectures, faculty resource-person engagements, hackathon mentoring and technical achievements. These achievements demonstrate the department's sustained commitment to academic excellence, industry readiness, innovation, and holistic student development. For further details, visit www.veltech.edu.in/it/

Student Message



G. Sasidhar Sai Varma
(VTU25747)

Title: AI-Assisted Software Engineering

AI-Assisted Software Engineering refers to the use of Artificial Intelligence to support different stages of the software development lifecycle. AI-powered tools can assist developers with code generation, code completion, debugging, testing, documentation, code review and software maintenance. The growing integration of AI into development environments is changing how software teams design, build and manage applications.

AI for Code Development

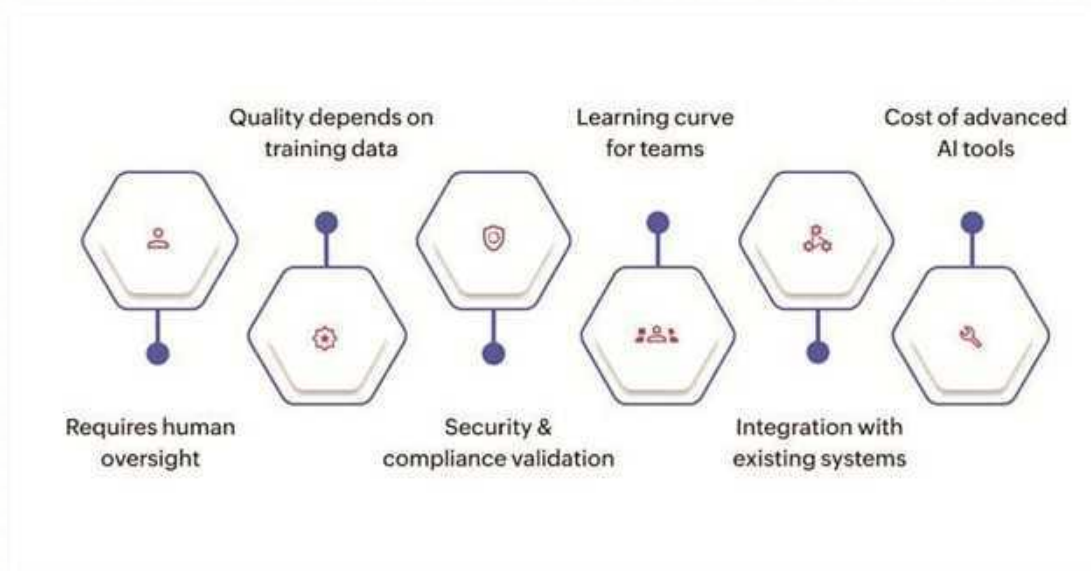
AI coding assistants can understand natural-language instructions and generate code in commonly used programming languages. They can provide code suggestions, complete partially written programs and explain existing code, helping developers work more efficiently. These capabilities are increasingly integrated into IDEs and development platforms.

Testing & Debugging

AI can assist in identifying potential bugs and generating test cases, unit tests and test data. AI-based tools can analyze code patterns and error messages to suggest possible fixes. This can help developers identify issues earlier in the development process.

Code Review & Quality

AI-assisted code review can examine source code for potential errors, security vulnerabilities, performance issues and coding-standard violations. Developers can use these suggestions alongside traditional review practices to improve code quality and maintainability.



Documentation & Knowledge Support

AI tools can generate technical documentation, API descriptions, comments and software summaries from existing code. They can also help developers understand unfamiliar codebases by explaining functions, dependencies and program behavior in natural language.

Software Development Lifecycle

AI assistance can extend beyond coding into requirements analysis, design, testing, deployment and maintenance. Natural-language interfaces can help teams convert requirements into technical tasks, generate development artifacts and automate repetitive engineering activities.

Key Benefits

AI-assisted software engineering can support faster development, reduced repetitive work, improved developer productivity and easier access to programming knowledge. It can also help developers learn unfamiliar technologies and accelerate prototyping.

Challenges

AI-generated code still requires human review and validation. Potential challenges include incorrect code, security vulnerabilities, outdated information, licensing and intellectual-property concerns, and over-reliance on AI-generated solutions. Developers must verify generated code through testing, code review and established software engineering practices.

Future Outlook

AI-assisted development is evolving toward more capable AI coding agents that can understand larger codebases, perform multi-step development tasks and interact with software development tools. The future of software engineering is likely to combine human creativity and decision-making with AI-assisted automation, while maintaining strong practices for security, testing, quality and responsible AI use.

Student Message



T. Tarun Naga Sai
(VTU26882)

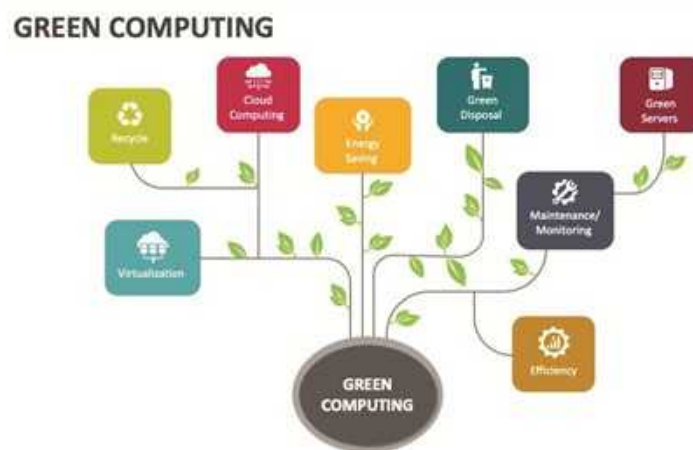
Green Computing & Sustainable Tech

Green Computing and Sustainable Technology focus on developing and using computing systems in ways that reduce energy consumption, environmental impact and electronic waste. As data centers, AI systems, cloud platforms and connected devices continue to expand, improving the energy efficiency and sustainability of digital infrastructure has become increasingly important.

Green Computing refers to practices and technologies that make computing systems more energy-efficient and environmentally responsible. It covers the entire technology lifecycle, including the design, manufacturing, operation, maintenance and disposal of computers, servers, networking equipment and other electronic devices.

Energy-Efficient Computing

Modern processors, specialized AI hardware and energy-efficient data centers are designed to deliver higher computing performance while consuming less power. Cloud computing, virtualization and workload optimization can also improve resource utilization by reducing unnecessary hardware and computing capacity.



Sustainable Data Centers

Data centers consume significant amounts of electricity for computing and cooling. Sustainable data-center practices include energy-efficient servers, advanced cooling systems, renewable energy, workload optimization and efficient power management. Monitoring energy usage can help organizations identify opportunities to reduce consumption.

E-Waste Management

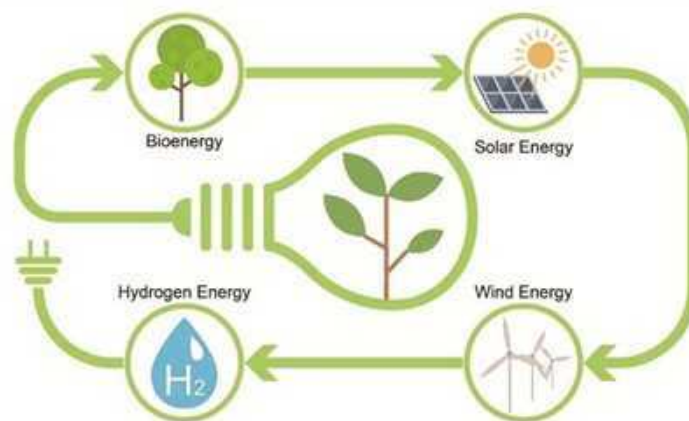
The rapid replacement of electronic devices contributes to electronic waste (e-waste). Sustainable technology practices encourage longer device lifecycles, repair, refurbishment, component reuse and responsible recycling. Proper disposal helps recover valuable materials and reduces environmental pollution.

AI & Sustainable Technology

AI can contribute to sustainability by optimizing energy consumption, transportation, manufacturing processes and resource utilization. At the same time, training and operating large AI models can require substantial computing resources. This has increased interest in efficient AI models, specialized hardware and energy-aware computing.

Applications

Green computing principles are relevant to data centers, cloud computing, smart buildings, IoT, telecommunications, manufacturing, transportation and smart cities. For example, IoT sensors and intelligent energy-management systems can monitor electricity consumption and help optimize the operation of buildings and industrial facilities.



Key Benefits

Sustainable computing can help organizations achieve lower energy consumption, reduced operational costs, better resource utilization and reduced environmental impact. It also encourages responsible management of electronic equipment throughout its lifecycle.

Challenges

Key challenges include high initial investment, increasing computing demand, e-waste generation, energy-intensive AI workloads and the environmental impact of semiconductor manufacturing. Organizations must balance performance requirements with energy efficiency and sustainability goals.

Future Outlook

The future of Green Computing is moving toward energy-efficient processors, sustainable data centers, renewable-powered computing, carbon-aware cloud infrastructure, efficient AI and circular approaches to electronic devices. Combining technological innovation with responsible resource management can help create a more sustainable digital ecosystem.

STUDENT ACHIEVEMENTS

Mr. Vishal Dev (VTU 12428), a 4th-year IT student, secured Second Place in the July 2023 edition of Vel Tech CODEATHON. He was awarded a cash prize of ₹3,000 for his outstanding performance in the coding competition. His achievement demonstrates strong programming, logical thinking, and problem-solving abilities.



Mr. Vishal Dev (VTU 12428), a 4th-year IT student, secured Second Place in the July 2023 edition of Vel Tech CODEATHON. He was awarded a cash prize of ₹3,000 for his outstanding performance in the coding competition. His achievement demonstrates strong programming, logical thinking, and problem-solving abilities.



Mr. Mohammed Ashkar and Mr. Vinoth Kumar S secured a Second prize in the Paper Presentation event during the National Level Technical Symposium “SPARKLE’23”. The symposium was organized by the Department of Information Technology, Dr. M.G.R. Educational and Research Institute, Chennai, on 31 August and 1 September 2023. Their achievement reflects his research aptitude, technical knowledge, and effective presentation skills.



One Day Workshop on "Impact and Usage of Generative AI"

Program Overview:

A one-day workshop on “Impact and Usage of Generative AI” was organized by the Department of Information Technology, School of Computing, on 19th September 2023. The workshop aimed to encourage students to explore the theoretical concepts of Artificial Intelligence and understand their practical application through active learning methods. The session was conducted offline with 59 student participants.

Key Topics Covered:

- ▶ Generative AI and its Uses ▶ Transformers ▶ ChatGPT
- ▶ Diffusion Models ▶ Demonstration of ChatGPT Usage

Resource Person:

Mr. Dharbaneshwer S J – Senior Data Scientist, Entropik Technologies Pvt. Ltd., Chennai

Learning Outcomes:

- ▶ Understanding the importance and concepts of Generative AI
- ▶ Understanding the significance and usage of ChatGPT
- ▶ Recognizing how AI-generated information can be communicated to relevant stakeholders

Event Coordinator:

Dr. J. Visumathi – Professor & Head, Department of Information Technology

Convenor:

Dr. V. Srinivasa Rao – Dean, School of Computing.

The event was successfully organized under the direction and guidance of the Dean of School of Computing, with active participation from students.



Codeathon-23

Program Overview:

Codeathon-23 was organized by the Department of Information Technology, School of Computing, as a technical competitive programming event on 16th October 2023. The event was designed to provide students with an opportunity to solve programming problems within a specified time limit, thereby strengthening logical thinking, coding ability and confidence.

Objectives:

Mental Agility and Quick Thinking – developing the ability to solve problems quickly within a given timeframe.

Competitive Spirit – encouraging focus, concentration, confidence and a sense of accomplishment.

Career Prospects – strengthening competitive programming profiles and improving employability prospects.

Learning Opportunity – exposing students to a variety of coding problems and arithmetic concepts.

Outcome:

The event helped students develop problem-solving, critical-thinking and efficient-coding skills. These competencies are valuable for careers in software development, data science and research, and competitive programming experience can also support technical assessment and recruitment processes.

Head of the Department:

Dr. J. Visumathi – Head, Department of Information Technology.

Convenor:

Dr. V. Srinivasa Rao – Dean, School of Computing.

Event Coordinators:

Mrs. D. Ramya – Assistant Professor, IT.

Mrs. J. Deepa – Assistant Professor, IT.

Student Highlights:

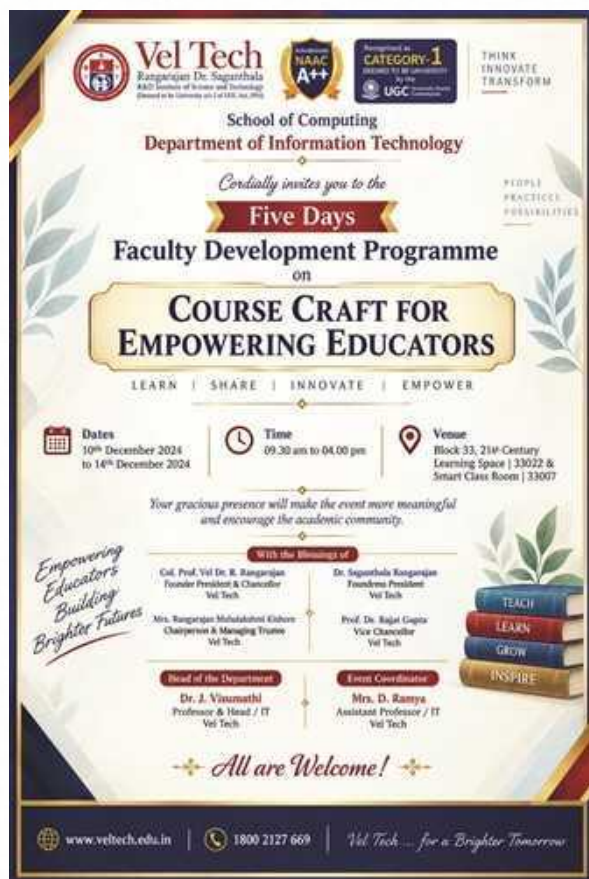
Ten students were recognized with merit/participation prizes. The first three positions were secured by Hari Krishnan V (II Year), Arpit Lamichhane (III Year), and M. Mohamed Ashkar (III Year), with cash prizes of ₹2,000, ₹1,500 and ₹1,000 respectively.

The event was successfully conducted with the direction and guidance of Dr. V. Srinivasa Rao, Dean, School of Computing, and Dr. J. Visumathi, Head of the Department.



FDP on Course Craft for Empowering Educators

Five-day Faculty Development Programme (FDP) titled “Course Craft for Empowering Educators” from 4th to 8th September 2023 at Learning Space II was organized to enhance faculty members’ teaching competencies, promote student-centric learning practices, and strengthen their understanding of Outcome-Based Education (OBE), effective classroom management, student mentoring, research proposal writing, and Course Outcome–Programme Outcome (CO-PO) mapping. The sessions also covered effective utilization of ICT tools, academic workflow management, internal assessment procedures, lesson plan preparation, and course material development. Conducted by experienced internal faculty members, the programme provided valuable insights into innovative teaching methodologies, academic documentation, and assessment practices. A total of 18 faculty members participated in the programme, which encouraged professional development, collaborative learning, and continuous improvement in teaching and academic practices.



Vel Tech
Rangarajan Dr. Sagorshala
R&D Institute of Science and Technology
(Established in the University era of I.I.T. Madras 1989)

NAAC A++
Recognized as **CATEGORY-1**
ACCREDITED TO 100% UNIVERSITY
By the **UGC**

School of Computing
Department of Information Technology

Cordially invites you to the
Five Days
Faculty Development Programme
on
COURSE CRAFT FOR EMPOWERING EDUCATORS

LEARN | SHARE | INNOVATE | EMPOWER

Dates
10th December 2024
to 14th December 2024

Time
09.30 am to 04.00 pm

Venue
Block-53, 21st-Century
Learning Space | 33022 &
Smart Class Room | 33007

*Your gracious presence will make the event more meaningful
and encourage the academic community.*

*Empowering
Educators
Building
Brighter Futures*

With the Blessings of

Col. Prof. Vel Dr. R. Rangarajan
Founder President & Chancellor
Vel Tech

Dr. Sagorshala Rangarajan
Foundress President
Vel Tech

Mrs. Rangarajan Mahalakshmi Ekshara
Chairperson & Managing Trustee
Vel Tech

Prof. Dr. Rajat Gupta
Vice Chancellor
Vel Tech

Head of the Department
Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Event Coordinator
Mrs. D. Ramya
Assistant Professor / IT
Vel Tech

**TEACH
LEARN
GROW
INSPIRE**

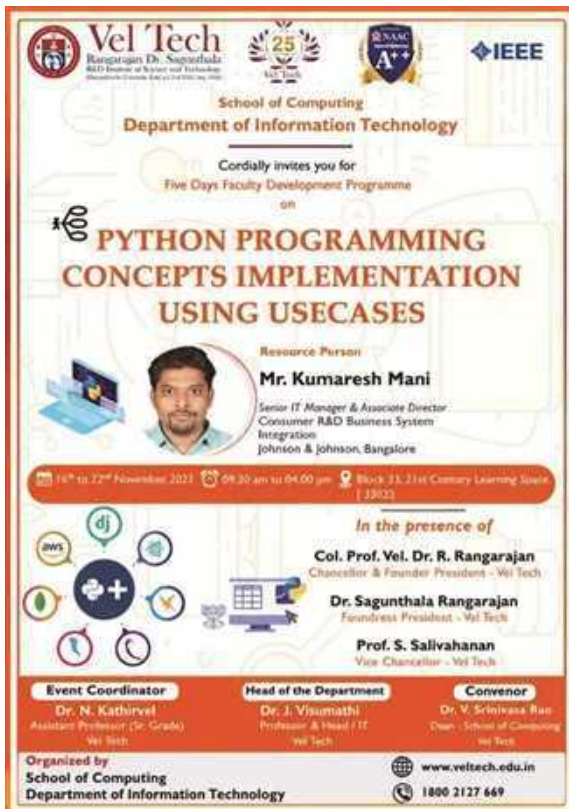
All are Welcome!

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FDP on Python Concept Implementations Using Use Cases

The Department of Information Technology, School of Computing, Vel Tech University, organized a Faculty Development Programme (FDP) titled “Python Concept Implementations Using Use Cases” from 16th to 22nd November 2023 at Learning Space II. The programme featured Mr. Kumaresh Mani, Senior IT Manager and Associate Director at Johnson & Johnson, Bangalore, as the resource person. The sessions focused on Python application architecture, solving business problems through analytical approaches, advanced Python techniques for real-time web development, and cloud-based application deployment. The resource person also shared practical examples, case studies, and demonstrations drawn from real-world industry projects, highlighting the applications of Python and cloud platforms in consumer product development and data management. A total of 42 faculty members participated in the programme, gaining valuable insights into industry-oriented Python applications, modern technological practices, and innovative problem-solving approaches. The FDP successfully enhanced the participants’ technical knowledge and understanding of applying Python concepts to real-world challenges.



STUDENT ACHIEVEMENTS

HEREvolution Codefest Hackathon

Mr. Rakesh, student of Vel Tech Rangarajan Dr. Sagunthala R&D Institute, participated in the HEREvolution Codefest Hackathon held during APOGEE-2024 at Birla Institute of Technology and Science (BITS), Pilani, from 4-7 April 2024. His participation in this competitive hackathon provided an opportunity to demonstrate his coding, problem-solving, innovation, and teamwork skills in a challenging technology-driven environment. The achievement reflects his active engagement in technical events and his enthusiasm for developing innovative solutions.



Pravin Kumar M participated in iACT 24, the Annual Student Convention of the International Society of Automation, Bangalore Section (ISA-B), held at FISAT, Kerala, on 19–20 April 2024. His participation provided valuable exposure to automation technologies and professional technical interactions.

iACT24 - Third Position in Ideathon

Mr. Pravin Kumar M. and Mr. Pravin Kumar M. was awarded a Certificate of Appreciation for securing Third Position in the Ideathon event organized as part of iACT24 – the Annual Student Convention of the International Society of Automation – Bangalore Section (ISA-B). The event was held on 19–20 April 2024 at the Federal Institute of Science and Technology (FISAT), Angamaly, Kerala. This achievement highlights his innovative thinking, problem-solving ability, technical creativity, and active participation in a competitive academic platform.



National Science Day - First Prize in Project Expo

Ms. Ghanavi was awarded a Certificate of Merit for securing First Place in the Project Expo held as part of the Vel Tech 7th Science Fest – 2024, organized in commemoration of National Science Day. The event was organized by the School of Science & Humanities and Freshman Engineering (FME), Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, on 30 March 2024. This achievement highlights the student's innovation, scientific thinking, technical creativity, and project development skills, reflecting active participation in academic and research-oriented activities.



“Two Day Workshop on Firewalls and Virtual Private Network (VPN)”

Program Overview:

A two-day workshop on Firewalls and Virtual Private Network (VPN) was organized by the Department of Information Technology, School of Computing. The workshop focused on helping students understand firewall fundamentals, configure and manage firewalls, explore advanced firewall techniques, and comprehend VPN concepts. The sessions combined conceptual learning with hands-on activities using Cisco Packet Tracer.

Key Highlights:

- Introduction to networking, switching concepts, IP addressing and subnetting.
- Network Layer 3 concepts, life of a packet and end-to-end communication.
- Introduction to routing protocols.
- Introduction to VPNs and VPN protocols.
- Hands-on setup of a Site-to-Site VPN using Cisco Packet Tracer.
- Introduction to firewalls and firewall policies.
- Hands-on configuration of packet-filtering firewall rules using Cisco Packet Tracer.

Learning Outcomes:

Participants gained an understanding of networking fundamentals, practical experience in setting up a Site-to-Site VPN and configuring packet-filtering firewall rules, and an understanding of how VPNs and firewalls function as complementary components of a network-security architecture.

Resource Person(s):

Mr. Madhan Sankaranarayanan – Technical Leader, Cisco, Chennai.

Mr. Sankaralingam T – Technical Leader, Cisco, Chennai.

Event Coordinator(s):

Dr. N. Kathirvel – Assistant Professor (Senior Grade), IT

The event was successfully conducted under the guidance of the School of Computing and the Department of Information Technology.



Vel Tech
Rangarajan Dr. Sagunthala
Autonomous Institute of Science and Technology
Chennai-600 076





School of Computing
Department of Information Technology

IEEE
MEMBER SOCIETY
SC: I-22WG045
GC: SBC15921

IEEE Computational Intelligence Society

Organizes
Two Days Workshop
on

Dates 9th & 10th February, 2024

Time 10.00 am to 04.00 pm

Venue Block 4,
EDUSAT Hall | 4102

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

Head of the Department
Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Event Coordinator
Dr. N. Kathirvel
Assistant Professor(SG) / IT
Vel Tech

FIREWALLS AND VIRTUAL PRIVATE NETWORK (VPN)

Resource Persons



Mr. Madhan Sankaranarayanan
Technical Leader
Cisco, Chennai.



Mr. Sankaralingam T
Technical Leader
Cisco, Chennai.

In the presence of

Col. Prof. Vel. Dr. R. Rangarajan
Chancellor & Founder President

Dr. Sagunthala Rangarajan
Foundress President

Prof. S. Salivahanan
Vice Chancellor

Organized by: **Department of Information Technology**

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Rangarajan Dr. Sagunthala
Autonomous Institute of Science and Technology
Chennai-600 076





School of Computing
Department of Information Technology

Cordially Invites You for

Two Days Workshop
On

FIREWALLS AND VIRTUAL PRIVATE NETWORK(VPN)



Mr. Madhan Sankaranarayanan
Technical Leader
Cisco, Chennai.



Mr. Sankaralingam T
Technical Leader
Cisco, Chennai.

SCHEDULE

9th & 10th February, 2024

10.00 am to 04.00 pm

Block 4,
EDUSAT Hall | 4102

In the presence of

Col. Prof. Vel. Dr. R. Rangarajan
Chancellor & Founder President - Vel Tech

Dr. Sagunthala Rangarajan
Foundress President - Vel Tech

Prof. S. Salivahanan
Vice Chancellor - Vel Tech

Event Coordinator
Dr. N. Kathirvel
Assistant Professor(SG) / IT
Vel Tech

Head of the Department
Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

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Department of Information Technology

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“Dum Bugs – 24”

Program Overview:

Dum Bugs – 24 was organized as a technical competitive programming event by the Department of Information Technology. The contest was designed to strengthen students' problem-solving abilities through time-bound programming challenges while encouraging competitive spirit, focus, confidence and continuous learning

Key Highlights:

- Mental agility and quick thinking through time-bound coding problems.
- Competitive spirit, concentration and confidence through challenging programming tasks.
- Career-oriented development of logical and programming skills.
- Exposure to a variety of problems and arithmetic concepts.
- Regular practice to keep students updated with programming concepts.

Learning Outcomes:

The event helped students develop problem-solving, critical-thinking and efficient-coding skills. These competencies are useful for careers in software development, data science and research, and competitive programming can also support technical assessment and recruitment processes.

Event Coordinator(s):

Dr. C. Sureshkumar – Assistant Professor, IT

Prize / Recognition Highlights:

Top prize recipients listed in the event report included Hari Krishnan V (₹2,000), Balaji P. (₹1,500) and M. Mohamed Ashkar (₹1,000). Additional cash prizes were awarded to other high-performing participants.

The event was successfully conducted under the guidance of the School of Computing and the Department of Information Technology.



Vel Tech
Rangarajan Dr. Sagunthala
B.D Institute of Science and Technology
Research & Training Vel Tech

School of Computing
Department of Information Technology

Organizes
Technical Contest
on

Dum Bugs '24





Event Coordinator

Dr. C. Sureshkumar
Assistant Professor / IT
Vel Tech

Head of the Department

Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Schedule

15th February, 2024
10.00 am to 04.00 pm
Block 4, EDUSAT Hall | 4102



In the presence of

Col. Prof. Vel. Dr. R. Rangarajan
Chancellor & Founder President

Dr. Sagunthala Rangarajan
Foundress President

Prof. S. Salivahanan
Vice Chancellor

Convenor

Dr. V. Srinivasa Rao
Dean - School of Computing
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SC: I-22WG005 GC: SBC15931

School of Computing
Department of Information Technology

Cordially invites you for
One Day Technical Contest
On

DUM BUGS '24

In the presence of

Col. Prof. Vel. Dr. R. Rangarajan
Chancellor & Founder President - Vel Tech

Dr. Sagunthala Rangarajan
Foundress President - Vel Tech

Prof. S. Salivahanan
Vice Chancellor - Vel Tech

Schedule

15th February, 2024
10.00 am to 04.00 pm
Block 4, EDUSAT Hall | 4102

Event Coordinator

Dr. C. Sureshkumar
Assistant Professor / IT
Vel Tech

Head of the Department

Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Convenor

Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

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Department of Information Technology 1800 2127 669



“One Day Workshop on Smart Interview Skills”

Program Overview:

The Department of Information Technology organized a one-day workshop on Smart Interview Skills to help students understand the interview process, identify their strengths and areas for improvement, and learn through questioning, practice, observation and professional feedback. The workshop emphasized a structured, goal-oriented approach to interview preparation.

Key Highlights:

- What is an interview and why it is important.
- Interview techniques and competency-based interviews.
- Common interview mistakes.
- Pre-interview preparation.
- Understanding the interview process.
- Learning through practical methods and active participation.

Learning Outcomes:

Participants were encouraged to learn by doing, investigate new concepts independently, practice actual interview methods, and try new approaches in a safe learning environment.

Event Coordinator(s):

Dr. J. Visumathi – Professor & Head, IT

Resource Person(s):

Mr. Narasimha Rao

The event was successfully conducted under the guidance of the School of Computing and the Department of Information Technology.



Vel Tech
Rangapet Dr. Sampathulu
Vellore Institute of Technology and Engineering
Established under the act of 1987
Estd. 1997
CATEGORY 1
A++

School of Computing
Department of Information Technology

Organizes **One Day Workshop**
on
SMART INTERVIEW SKILLS

Schedule
26th February, 2024
10.00 am to 04.00 pm
Block 4, Video Conferencing Hall [4101]

RESOURCE PERSON
Mr. Narasimha Rao
Leadership Training Consultant
Fincare Small Finance Bank
Chennai

In the presence of
Col. Prof. Vel. Dr. R. Ranganathan
Chancellor & Founder President
Dr. Supriyatha Ranganathan
Foundress President
Prof. S. Selvasubaran
Vice Chancellor

Event Coordinator
Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Head of the Department
Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

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School of Computing
www.veltech.edu.in 1800 2127 449



“One Day Technical Contest on Byte Minds Forum GD-24”

Program Overview:

Byte Minds Forum GD-24 was organized as a one-day technical contest on Group Discussion. The contest aimed to enhance students' communication and interpersonal skills, improve their ability to express ideas effectively in a group setting, and foster teamwork and collaboration. Participants were provided with opportunities to present viewpoints, listen to others and constructively debate different perspectives.

Key Highlights:

- Round 1: Participants were divided into four batches.
- Each batch consisted of 11 participants, with participants progressing to the next round.
- Round 2: 12 participants took part in the final round.
- The discussion topic was given on the spot.
- Judges evaluated participants based on their performance.

Learning Outcomes:

The contest provided a platform for students to showcase communication skills, critical thinking and persuasive articulation. Constructive feedback from facilitators and peers helped participants identify areas for improvement and enhance their overall group-discussion proficiency.

Judges:

Dr. R. Srinivasan – Professor, CSE.

Dr. Rajesh Kambattan K – Associate Professor, CSE.

Event Coordinator(s):

Dr. N. Kathirvel – Assistant Professor (Senior Grade), IT.

Arpit Lamichhane – Student Coordinator.

P. Sai Kiran – Student Coordinator.

P.V. Sai Ram Reddy – Student Coordinator.

The event was successfully conducted under the guidance of the School of Computing and the Department of Information Technology.

Vel Tech
Rangarajan Dr. Sagunthala
Vellore Institute of Technology
Rajaram Engineering College

School of Computing
Department of Information Technology
Organizing IEEE Computational Intelligence Society
Technical Event
on

**Byte Minds Forum
GD-24**

**Best 3 Performers
Win Cash!
&
Consolation
Prize**

18-03-2024
01.45 pm to 04.45 pm
Block 4,
APJ Abdul Kalam
Hall | 4103

Student Coordinators
Arpit Lamichhane, VTU 21482
P. Sai Kiran, VTU20655
P.V.Sai Ram Reddy, VTU20667
BIRD Year IT, Vel Tech

Faculty Coordinator
Dr. N.Kathirvel
Assistant Professor(SG) / IT
Vel Tech

Head of the Department
Dr. Visumathi J
Professor & Head / IT
Vel Tech

In the presence of
Col. Prof. Vel. Dr. R. Rangarajan
Chancellor & Founder President
Vel Tech
Dr. Sagunthala Rangarajan
Foundress President
Vel Tech
Prof. S. Sathyanan
Vice Chancellor
Vel Tech

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

Organized by: Department of Information Technology
www.veltech.edu.in 1800 2127 669

1st Prize
"BYTE MINDS FORUM GD-24"

Student Coordinators
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Dept. of IT
Vel Tech

Convenor
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Dean - School of Computing
Vel Tech

2nd Prize
"BYTE MINDS FORUM GD-24"

Student Coordinators
Arpit Lamichhane, VTU 21482
P. Sai Kiran, VTU20655
P.V.Sai Ram Reddy, VTU20667
BIRD Year IT, Vel Tech

Faculty Coordinator
Dr. N.Kathirvel
Assistant Professor(SG)
Dept. of IT
Vel Tech

Head of the Department
Dr. Visumathi J
Professor & Head
Dept. of IT
Vel Tech

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

3rd Prize
"BYTE MINDS FORUM GD-24"

Student Coordinators
Arpit Lamichhane, VTU 21482
P. Sai Kiran, VTU20655
P.V.Sai Ram Reddy, VTU20667
BIRD Year IT, Vel Tech

Faculty Coordinator
Dr. N.Kathirvel
Assistant Professor(SG)
Dept. of IT
Vel Tech

Head of the Department
Dr. Visumathi J
Professor & Head
Dept. of IT
Vel Tech

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
Vel Tech

Winner's
"BYTE MINDS FORUM GD-24"

Student Coordinators
Arpit Lamichhane, VTU 21482
P. Sai Kiran, VTU20655
P.V.Sai Ram Reddy, VTU20667
BIRD Year IT, Vel Tech

Faculty Coordinator
Dr. N.Kathirvel
Assistant Professor(SG)
Dept. of IT
Vel Tech

Head of the Department
Dr. Visumathi J
Professor & Head
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Vel Tech

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Dean - School of Computing
Vel Tech

“Websyne – 24”

Program Overview:

Websyne – 24 was organized by the Department of Information Technology as a technical competitive programming event. The event focused on strengthening students' mental agility, quick thinking, competitive spirit, career-oriented logical skills and continuous learning through coding challenges.

Key Highlights:

- Mental agility and quick thinking through time-constrained programming problems.
- Competitive spirit, focus, concentration and confidence.
- Development of logical and career-oriented programming skills.
- Exposure to a wide range of programming problems and arithmetic concepts.
- Continuous practice to keep students up to date with programming concepts.

Learning Outcomes:

The event supported the development of problem-solving, critical-thinking and efficient-coding skills. The report highlights the relevance of these competencies to software development, data science and research, as well as to technical recruitment and assessment.

Event Coordinator(s):

Dr. S. Sureshu – Assistant Professor, IT

Prize / Recognition Highlights:

The event report records M. Mohamed Ashkar as the first prize recipient (₹2,000), Arpit Lamichhane as the second prize recipient (₹1,500), and Sagar Gupta as the third prize recipient (₹1,000), followed by additional cash-prize recipients.

The event was successfully conducted under the guidance of the School of Computing and the Department of Information Technology.



Vel Tech
Rangarajan Dr. Sagunthala
Vellore Institute of Technology
Approved by the University Grants Commission, New Delhi

School of Computing
Department of Information Technology

Organizes
Technical Contest
on

WEBSYNE '24





Event Coordinator
Dr. S. Sureshu
Assistant Professor / IT
Vel Tech

Head of the Department
Dr. J. Visumathi
Professor & Head / IT
Vel Tech

Schedule
16th February, 2024
10.00 am to 04.00 pm
Block 4, EDUSAT Hall | 4102



IEEE Computational Intelligence Society
Madras Section
SC: I-22WGO05 GC: SBC15921

In the presence of

Col. Prof. Vel. Dr. R. Rangarajan
Chancellor & Founder President

Dr. Sagunthala Rangarajan
Foundress President

Prof. S. Salivahanan
Vice Chancellor

Convenor
Dr. V. Srinivasa Rao
Dean - School of Computing
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WEBSYNE '24




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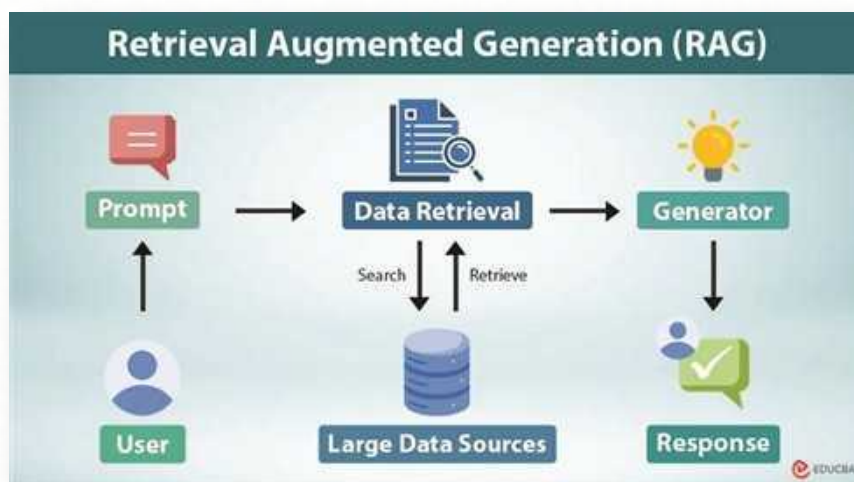


Aashirth (VTU)

Retrieval-Augmented Generation (RAG) & Vector Databases

Retrieval-Augmented Generation (RAG) became an important approach for building more useful and knowledge-aware Generative AI applications. Instead of relying only on the information learned during model training, RAG allows an AI system to retrieve relevant information from external knowledge sources and use it to generate a response. This approach is particularly useful when applications need to work with updated, specialized or organization-specific information.

RAG combines information retrieval with Large Language Models (LLMs). When a user submits a question, the system first searches a connected knowledge source for relevant information. The retrieved content is then provided to the language model as additional context, allowing the model to generate a response based on the available information.



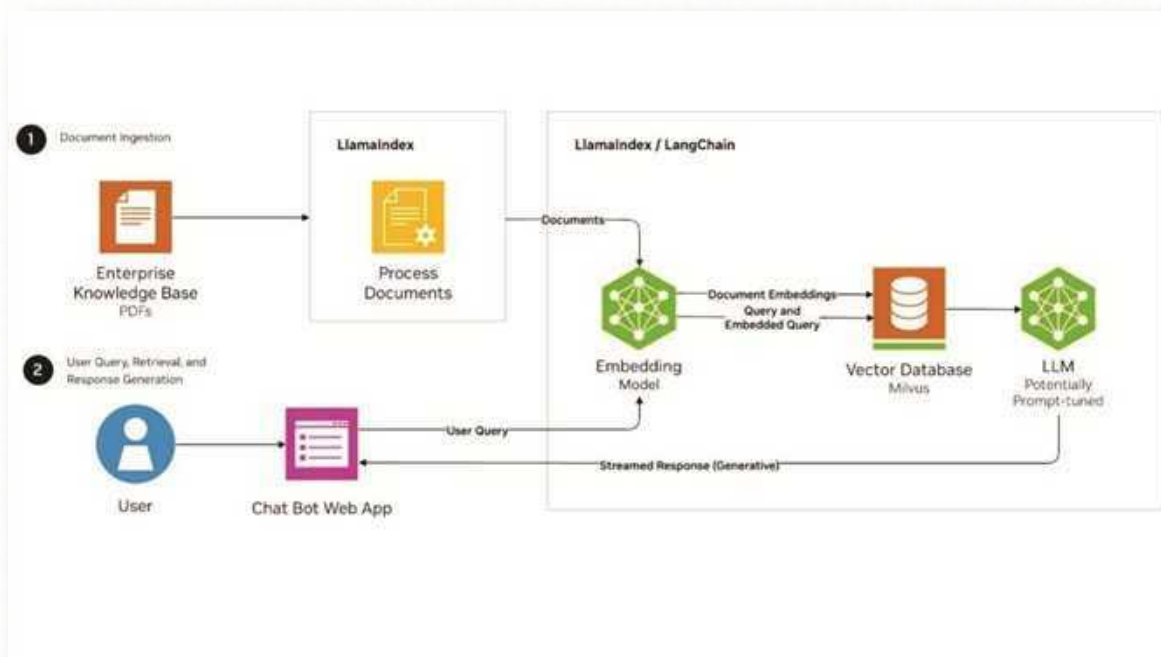
Role of Vector Databases

Vector databases store information as numerical representations called embeddings. These embeddings capture the semantic meaning of text, images or other data. When a user asks a question, the query can also be converted into an embedding and compared with stored vectors to identify semantically similar information. Popular technologies included Pinecone, Milvus, Weaviate, Chroma and FAISS, which supported different approaches to vector search and similarity retrieval.

A typical RAG pipeline involves document collection, data preprocessing, chunking, embedding generation, vector storage, similarity search and response generation. Relevant documents are retrieved from the vector database and supplied to the LLM as context. The model then uses this retrieved information to formulate the final response.

Applications

RAG is useful for AI chatbots, enterprise knowledge assistants, customer support, education, healthcare information systems, research assistants and document analysis. Organizations can connect AI applications to internal documents, manuals, policies and knowledge bases without requiring the language model to be retrained every time the underlying information changes.



Key Benefits

RAG can improve access to domain-specific information, knowledge freshness, response relevance and transparency. It can also reduce the need for repeated model retraining when information changes, since the external knowledge source can be updated independently.

Challenges

RAG systems must address challenges such as retrieval accuracy, poor-quality source data, incorrect context, embedding selection, latency, data privacy and hallucinations. The quality of the generated response depends significantly on whether the retrieval system finds the right information.

Future Outlook

RAG is evolving toward more advanced systems that combine hybrid search, re-ranking, knowledge graphs, multimodal retrieval and agentic workflows. Vector databases and retrieval technologies are becoming important components of AI applications that need to connect Large Language Models with reliable and continuously updated external knowledge.

Student Message



M. Sri Vathsala
(VTU26463)

Title: Spatial Computing & Extended Reality (XR)

Spatial Computing and Extended Reality (XR) represent a major shift toward more immersive and interactive digital experiences. These technologies combine the physical and digital worlds by using sensors, cameras, computer vision, 3D graphics, Artificial Intelligence and spatial awareness to understand and interact with the surrounding environment. XR includes Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR), creating new possibilities for education, healthcare, manufacturing, entertainment and professional training.



Spatial computing enables computers to understand the physical space around a user and place digital information or objects within that environment. Devices can use cameras, depth sensors, motion tracking and spatial mapping to understand surfaces, objects and user movements. This allows users to interact with digital content using gestures, eye movements, voice and physical movement.

Extended Reality (XR)

Extended Reality (XR) is an umbrella term covering AR, VR and MR. AR overlays digital information onto the real world, while VR creates a fully immersive digital environment. MR combines physical and digital environments, allowing virtual objects to interact with the user's surroundings. Together, these technologies provide different levels of immersion and interaction.

Key Technologies

Spatial Computing and XR applications rely on technologies such as computer vision, 3D rendering, spatial mapping, motion tracking, depth sensing, hand tracking and AI. Modern XR devices increasingly use advanced cameras and sensors to understand environments and provide more natural interactions.

Applications

These technologies are being explored in education, healthcare, manufacturing, engineering, architecture, retail, tourism and entertainment. In education, students can explore interactive 3D models and virtual environments. In manufacturing, XR can support equipment visualization, maintenance guidance and employee training. Healthcare applications include medical visualization, simulation and training.

AI and Spatial Computing

The integration of Artificial Intelligence with spatial computing is enabling systems to better understand physical environments and user interactions. AI can support object recognition, scene understanding, voice interaction and intelligent digital assistants, making XR experiences more adaptive and context-aware.

Key Benefits

Spatial Computing and XR can provide immersive learning, interactive visualization, remote collaboration, realistic training and improved human-computer interaction. They can also help users understand complex concepts by presenting information in three-dimensional and spatial formats.

EXTENDED REALITY (XR)

Augmented Reality



Virtual Reality



Mixed Reality



360 Degree Video



Challenges

Despite their potential, XR systems face challenges including high hardware costs, battery limitations, device comfort, privacy concerns, motion sickness, limited content and the complexity of creating high-quality 3D experiences. Accurate spatial tracking and protection of environmental and user data are also important considerations.

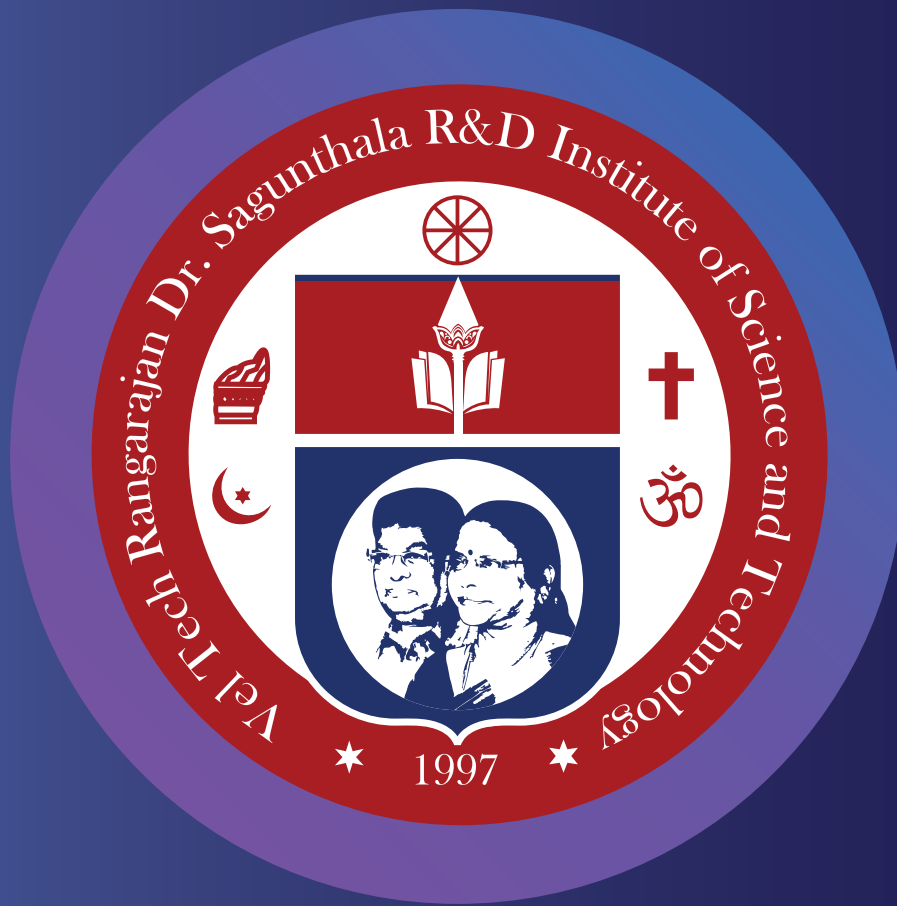
Future Outlook

The future of Spatial Computing and XR is moving toward lighter wearable devices, AI-powered spatial understanding, improved 3D interfaces, immersive collaboration and more natural human-computer interaction. As hardware, AI, sensors and 3D technologies continue to advance, spatial computing could become an important interface for interacting with digital information and intelligent systems.

2024 Placed Students Details



Sl. No.	Academic Year	Name of the Student	VTU No.	Company Placed	Package/ Annum
1	2023-24	Prashant Kumar Singh	16998	Payoda Technology Pvt Ltd	12.8 LPA
2	2023-24	Muhammed Ajnas D P	15365	Petromax Solutions	9 LPA
3	2023-24	Gullipalli Sri Harsha	17121	TeamLease Digital	9 LPA
4	2023-24	Vishal Dev	12428	Genpact	8.0 LPA
5	2023-24	Pagadala Hemanth	17155	Comcast	7.0 LPA
6	2023-24	Sajjarao Hari Narayana	12044	Lamincamp Technologies Bangalore	7.0 LPA
7	2023-24	Padidapu Venkata Siva Sai Prathap	18060	ICICI Bank, Hyderabad	4.8 LPA
8	2023-24	Kasarla Prashanth	16988	Eternal	4.8 LPA
9	2023-24	Rohan Kamat	18718	Shankar National English Bording School	4.6 LPA
10	2023-24	Kanchi Mohan Kumar Reddy	16953	LTI Mindtree	4.05 LPA
11	2023-24	Makineni Vasu	17627	Academor	4.0 LPA
12	2023-24	Aryan Maurya	16067	EpikInDiFi	4.0 LPA
13	2023-24	Tadi Veera Venkata Satya Mahesh	18017	L&T Technology Services	4.0 LPA
14	2023-24	Avala Praveen	17283	Edicate, Bangalore	4 LPA
15	2023-24	V Kranthi Kumar	17737	IDFC bank, Hyderabad	4 LPA
16	2023-24	M Mohamad Muzameel	12066	NTT data, chennai	3.9 LPA
17	2023-24	A Mohammed Fazil	16814	M/s. SecurEyes Techno Services Pvt. Ltd., Bangalore	3.6 LPA
18	2023-24	Jitendra Kumar	16710	QSpider	3.5 LPA
19	2023-24	Manoj Reddy	18023	Tech Mahindra	3.25 LPA
20	2023-24	Abi Sundar	16822	Face Prep	3.13 LPA
21	2023-24	Nedunuri Avinash Kumar	16856	Blend Vidya	3.0 LPA
22	2023-24	Mahendra Erika	15356	Technologies global	3.0 LPA
23	2023-24	CH Ranganadh	17594	Zen Exim Pvt Limited, Ahmedabad	3.0 LPA
24	2023-24	Mohammed Aazath S	16552	Ocean Sparkle Ltd- Chennai	3.0 LPA
25	2023-24	S Rohan	15339	GK HR Consulting, Bangalore	3 LPA
26	2023-24	Kurra Sri Harsha	15985	3K Softech Pvt Ltd, Pune	2.4 LPA
27	2023-24	Saravana Perumal V R	16828	Worth IT Consulting Services	2.0 LPA
28	2023-24	A Anish Rinsten	12237	Quess Corp. Ltd.,	2 LPA
29	2023-24	M Likhitha	17569	Wipro Technologies, Hyderabad	1.9 LPA
30	2023-24	Divas Jain	16060	MQ Pvt. Ltd, Bangalore	1.9 LPA
31	2023-24	Vikash Kumar	16992	Cvfuture	1.8 LPA



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Department of
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