



PRAGATI ENGINEERING COLLEGE
(AUTONOMOUS)
DEPARTMENT OF CSE (DATA SCIENCE)
DATA ANALYTICS CLUB

25-09-2026

NOTICE

As part of the activities under the **Data Analytics Club** of the Department of CSE (Data Science), this event will be conducted.

Title of the Event (Topic): Quantum Computing: From Basics to Future Technologies

Speaker: K. Ammani (24A31A4415)

Date of the Event: 26-09-2026

Time of the Event: 02:00 PM to 03:00 PM

Venue of the Event: CF- 8 (TECH BLOCK)

All the Data Analytics Club members who are interested are advised to attend this session.

M. Lakshmi 25/9/2026
HoD - CSE (Data Science)



Copy To:

1. The Principal
2. Department Notice Board
3. Data Analytics Club Activity File



PRAGATI ENGINEERING COLLEGE

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DEPARTMENT OF CSE (DATA SCIENCE)

DATA ANALYTICS CLUB

28-09-2026

A Report on the Data Analytics Club Activity

As part of the technical activities under the **Data Analytics Club** of the Department of CSE (Data Science), a foundational and interactive technical seminar was organized on "Quantum Computing: From Basics to Future Technologies."

Name of the Event: Technical Seminar

Name of the Topic: Quantum Computing: From Basics to Future Technologies

Name of the Speaker: K. Ammani(24A31A4415)

Date of the Event: 26-09-2026

Time of the Event: 02:00 PM T 03:00 PM

Venue of the Event: CF – 8(TECH BLOCK)

A total of 64 students attended this event. All the students have actively participated in the event.

BRIEF WRITE – UP OF THE EVENT:

The Data Analytics Club organized an engaging and interactive technical seminar on "Quantum Computing: From Basics to Future Technologies." The session aimed to introduce students to the fundamentals of quantum computing, explain how quantum systems work, and provide an overview of how quantum technologies can contribute to solving complex real-world problems.

The session began with an introduction to Quantum Computing Basics, focusing on fundamental concepts such as qubits, superposition, and entanglement. Students were introduced to the differences between classical computing and quantum computing and understood the basic idea of how quantum systems represent and process information.

The seminar then explored Quantum Software and Programming, where students were introduced to simple quantum circuits and quantum gates. Interactive explanations and demonstrations helped participants understand how basic quantum operations can be represented and executed.

A major part of the session focused on Variational Quantum Algorithms (VQAs). Students learned how classical and quantum computers can work together in a hybrid approach. The concepts of parameters, quantum circuits, cost functions, optimization, and the iterative process of improving solutions were explained using simple examples such as route optimization.

The session also discussed the Future of Quantum Computing, introducing emerging technologies such as Quantum Internet, Quantum Sensors, and Quantum Digital Twins. These technologies were presented as potential areas where quantum computing concepts can contribute to future technological development.

To make the session more engaging, interactive activities, questions, quizzes, and challenges were conducted throughout the seminar. Students were encouraged to participate and apply the concepts they learned.



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The seminar also included a mini quantum computing project, allowing students to see how basic quantum concepts can be implemented and experienced in practice. This helped connect the theoretical concepts discussed during the session with practical application.

1. Introduction to Quantum Computing

- The session introduced the basic idea of Quantum Computing and explained how it differs from traditional classical computing.
- Students were introduced to qubits, the basic unit of quantum information.
- Fundamental quantum concepts such as superposition and entanglement were explained using simple and relatable examples.
- The session helped students understand why quantum computing is considered a different approach to information processing.
- The potential of quantum computing for solving certain complex problems was also discussed.

2. Quantum Software and Programming

- Students were introduced to the basic concepts of quantum circuits and quantum gates.
- Simple quantum circuits were used to explain how quantum operations are performed.
- The session provided an introductory understanding of how quantum programs can be represented and executed.
- Interactive demonstrations helped students connect theoretical quantum concepts with basic programming and circuit-based operations.
- Students gained an initial understanding of the software side of quantum computing.

3. Variational Quantum Algorithms

- The seminar introduced Variational Quantum Algorithms (VQAs) as a hybrid approach combining classical and quantum computing.
- Students learned how the classical computer can optimize parameters while the quantum computer evaluates the quantum circuit.
- The concept of parameters and how changing them can produce different results was explained.
- The role of a cost function in measuring the quality of a solution was discussed.
- The iterative VQA process was explained through the cycle: Optimize → Run → Measure → Improve.
- Real-world optimization examples such as route optimization were used to make the concept easier to understand.

4. Future of Quantum Computing

- The session introduced emerging areas and future possibilities in quantum technology.
- Quantum Internet was discussed as a future communication technology based on quantum principles.
- Quantum Sensors were introduced as technologies that can provide highly sensitive measurements for various applications.



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- Quantum Digital Twins were introduced as an emerging concept connecting quantum technologies with digital representations and simulations of real-world systems.
- Students gained awareness of how quantum technologies may influence future computing, communication, sensing, and simulation.

5. Interactive Activities and Quiz

- Interactive questions and activities were conducted to make the session engaging and participative.
- Students were encouraged to answer questions based on the quantum concepts discussed during the seminar.
- A quiz/challenge-based approach helped participants test their understanding of topics such as qubits, superposition, entanglement, quantum circuits, and VQAs.
- The activities created an interactive learning environment and encouraged students to actively participate.

6. Mini Quantum Project

- A simple quantum computing project was demonstrated to provide students with practical exposure.
- The project helped students observe how basic quantum concepts can be applied in a practical setting.
- Students were able to connect concepts such as quantum circuits, quantum operations, and measurement with an actual implementation.
- The demonstration provided a practical perspective on the possibilities of quantum computing.

HIGHLIGHTS AND KEY TAKEAWAYS

- Gained a foundational understanding of Quantum Computing and its difference from classical computing.
- Learned the basic concepts of qubits, superposition, and entanglement.
- Understood the fundamentals of quantum circuits and quantum gates.
- Gained introductory exposure to Quantum Software and Programming.
- Understood how classical and quantum computers work together through Variational Quantum Algorithms.
- Learned the VQA workflow of Optimize → Run → Measure → Improve.
- Understood the role of parameters and cost functions in optimization.
- Explored real-world applications such as route optimization and drug-related problem solving.
- Gained awareness of Quantum Internet, Quantum Sensors, and Quantum Digital Twins.
- Participated in interactive activities, quizzes, and challenges.
- Gained practical exposure through a mini quantum computing project.



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POST-EVENT FEEDBACK

Participants found the seminar informative, interactive, and beginner-friendly. Students appreciated the use of simple explanations, relatable examples, interactive questions, and practical demonstrations to understand the fundamentals of quantum computing.

The discussion on the future of quantum computing, including Quantum Internet, Quantum Sensors, and Quantum Digital Twins, helped students understand the broader possibilities of quantum technologies.

Overall, the session successfully provided students with a foundational understanding of quantum computing, its applications, emerging technologies, and its potential role in future computing.

QUESTIONS RAISED BY STUDENTS:

- What is the difference between classical computing and quantum computing?
- What is a qubit and how is it different from a classical bit?
- What is superposition in quantum computing?
- What is quantum entanglement?
- How do quantum gates work?
- How are quantum circuits created and executed?
- How does quantum programming differ from classical programming?
- What are Variational Quantum Algorithms?
- How do classical and quantum computers work together in VQAs?
- What are parameters and cost functions in a VQA?
- What are the real-world applications of quantum computing?
- What is the concept behind Quantum Internet?
- How are Quantum Sensors different from conventional sensors?
- What are Quantum Digital Twins?
- What career and learning opportunities are available in Quantum Computing?

PHOTOGRAPHS FROM THE EVENT:



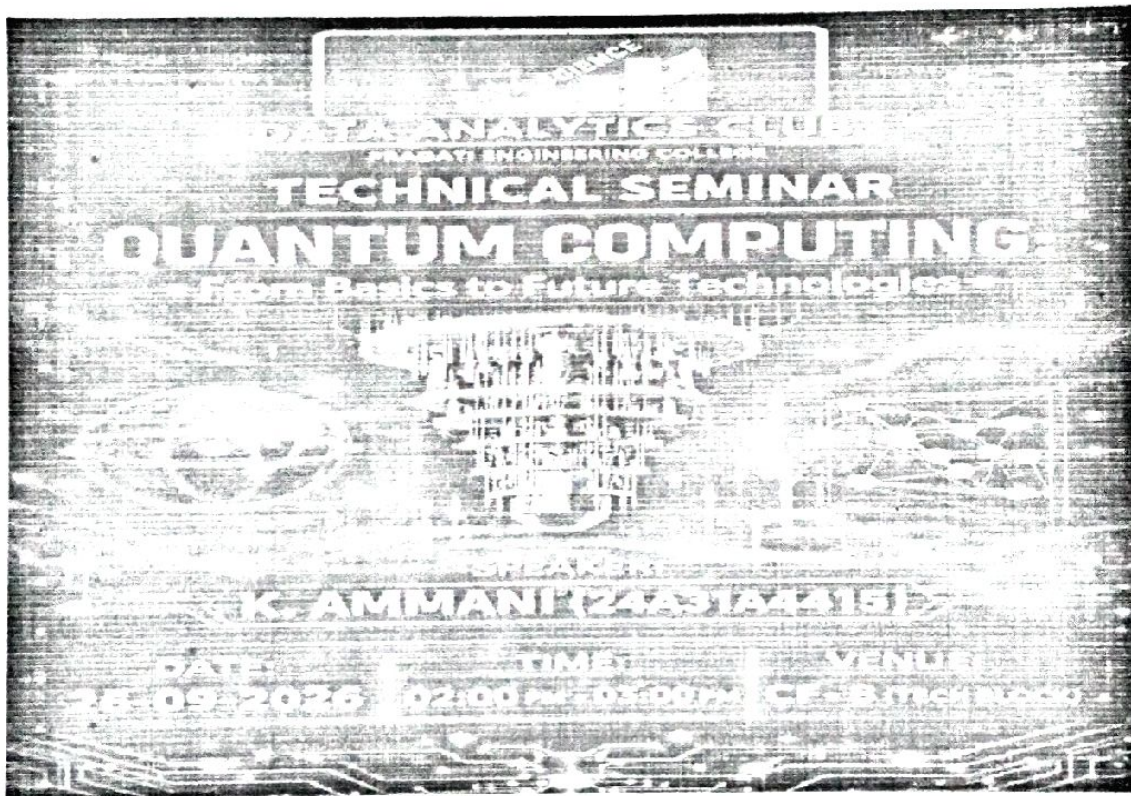


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[Signature]
28/9/2026
Faculty Coordinator

[Signature]
28/9/2026
HOD - CSE (DS)



Enclosures:

1. Student Attendance Sheets



PRAGATI ENGINEERING COLLEGE

(AIU APPROVED)

(Approved by AICTE, Government of India & Affiliated to JNTUS, Hyderabad & Accredited by NAAC)

1-578, Add. Road, Narayana - 501 001, New Prakasharam, F.G. Road, A.P.

Ph: 08521-16121, 16122, 16123 Fax: 08521-16122

DEPARTMENT OF CSE (DATA SCIENCE)

DATA ANALYSIS CLUB

Name of the Event: Technical Seminar

Title of the Event Topic: Fundamentals of Quantum Computing

Speaker (Name and Present at the event): K. Jyothsna

Date of the Event: 07/04/2023 Time of the event: 2:30 PM Venue of the Event: ITG

Total students attended: 24

S.No	ID Number	Name	Branch	Year	Signature of the Student
1	25580104001	A. Sai Vignesh	IT	2 nd	
2	25580104002	B. Anshuman	CS	2 nd	
3	25580104003	A. K. Anjan Prasad	CS	2 nd	
4	25580104004	M. Sai - Jyothsna	CS	2 nd	
5	25580104005	C. Anshuman	IT	2 nd	
6	25580104006	M. Sai Anjan Prasad	CS	2 nd	
7	25580104007	D. Sai Anjan	CS	2 nd	
8	25580104008	K. Sai Anjan Prasad	CS	2 nd	
9	25580104009	K. Sai Anjan Prasad	CS	2 nd	
10	25580104010	A. Sai Anjan	CS	2 nd	
11	25580104011	A. Sai Anjan	CS	2 nd	
12	25580104012	A. Sai Anjan	CS	2 nd	
13	25580104013	A. Sai Anjan	CS	2 nd	
14	25580104014	A. Sai Anjan	CS	2 nd	
15	25580104015	A. Sai Anjan	CS	2 nd	
16	25580104016	A. Sai Anjan	CS	2 nd	
17	25580104017	A. Sai Anjan	CS	2 nd	
18	25580104018	A. Sai Anjan	CS	2 nd	
19	25580104019	A. Sai Anjan	CS	2 nd	
20	25580104020	A. Sai Anjan	CS	2 nd	
21	25580104021	A. Sai Anjan	CS	2 nd	
22	25580104022	A. Sai Anjan	CS	2 nd	
23	25580104023	A. Sai Anjan	CS	2 nd	
24	25580104024	A. Sai Anjan	CS	2 nd	

K. Sai Anjan
Name of the Student Coordinator

K. Sai Anjan
Signature of the Faculty Coordinator



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1-378, ADB Road, Surampalem - 533 437, Near Peddapuram, E.G. Dist., A.P.

Ph: (08852) - 252233, 252234, 252235 Fax: (08852) - 252232

DEPARTMENT OF CSE (DATA SCIENCE)

DATA ANALYTICS CLUB

Name of the Event: Technical Seminar

Title of the Event (Topic): fundamentals of Quantum Computing

Speaker (Resource Person) of the event: K. Ammani

Date of the Event: 26/09/26

Time of the Event: 2:00-3:00

Venue of the Event: CF8

List of Students Attended: 24

S.No	Roll Number	Name	Branch	Year	Signature of the student
1	25A31A4407	J. Likhitha	DS-A	2 nd	Likhitha
2	25A31A4404	G. Malahima	DS-A	2 nd	G. Malahima
3	25A31A4406	G. Malika	DS-A	2 nd	Malika
4	25A31A4420	N. Manju	DS-A	2 nd	N. Manju
5	25A31A4403	E. Vidyadhari	DS-A	2 nd	E. Vidyadhari
6	25A31A4405	G. Ruchitha	DS-A	2 nd	Ruchitha
7	24A31A4498	K. Sreeja	DS-B	3 rd	Sreeja
8	24A31A4489	P. Mahalakshmi	DS-B	3 rd	Mahalakshmi
9	24A31A4492	D. Anitha	DS-B	3 rd	Anitha
10	24A31A4474	G. Indu	DS-B	3 rd	Indu
11	24A31A4475	G. Loukhye	DS-B	3 rd	G. Loukhye
12	24A31A4468	P. Bharoni	DS-B	3 rd	Bharoni
13	24A31A4479	M. Sahasra	DS-B	3 rd	Sahasra
14	24A31A4460	P. Malitha	DS-C	3 rd	Malitha
15	24A31A4409	G. Magee	DS-C	3 rd	Magee
16	24A31A4467	P. Sujini	DS-C	3 rd	Sujini
17	24A31A4460	G. Mohana Ramya	DS-C	3 rd	G. Mohana Ramya
18	24A31A4464	Bh. V. Pranathi	DS-C	3 rd	Bh. V. Pranathi
19	24A31A4462	S. Jhansi Lakshmi	DS-C	3 rd	S. Jhansi Lakshmi
20	25A31A4423	K. Durga Bhavani	AIML-A	2 nd	K. Bhavani
21	25A31A4426	T. Likhitha	AIML-A	2 nd	T. Likhitha
22	25A31A4433	Y. Devika Priya Pujitha	DS-A	2 nd	Y. Devika Priya Pujitha
23	25A31A4412	K. Deepthi	DS-A	2 nd	Deepthi
24	25A31A4415	H. Siri Vennela	DS-A	2 nd	H. Siri

K. S. Bhanu

K. S. Bhanu

Name of the Student Coordinator

Signature of the Faculty Coordinator



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Ph: (08852) - 252233, 252234, 252235 Fax: (08852) - 252232

DEPARTMENT OF CSE (DATA SCIENCE)

DATA ANALYTICS CLUB

Name of the Event: Technical Seminar

Title of the Event (Topic): fundamentals of Quantum computing

Speaker (Resource Person) of the event: K. Armani

Date of the Event: 26/09/26

Time of the Event: 2:00-3:00

Venue of the Event: CFR

List of Students Attended: 16

S.No	Roll Number	Name	Branch	Year	Signature of the student
1	25A31A4229	T. Rushitha	AIML	1 st	<u>Rushitha</u>
2	25A31A4221	R. Amrutha Ishwarya	AIML	2 nd	<u>Amrutha</u>
3	24A31A4480	M. Anuradha	DS	3 rd	<u>M. Anuradha</u>
4	24A31A4467	A.S.P. Ramya Sunitha	DS	3 rd	<u>A.S.P.R. Sunitha</u>
5	24A31A4483	N. Rama Sivarani	DS	3 rd	<u>N.R. Sivarani</u>
6	26A35A4208	G. Lakshmi Anusha	AIML	1 st	<u>G. Lakshmi Anusha</u>
7	25A31A4280	T. Pallavi	AIML	1 st	<u>T. Pallavi</u>
8	25A31A4210	G. Puarna Chandini	AIML	1 st	<u>G. P. Chandini</u>
9	25A31A4203	B.C.P. Vamsini	AIML	1 st	<u>B. Chanya</u>
10	25A31A4410	G. Charan	DS	1 st	<u>Charan</u>
11	24A31A44A4	G. Kiran	DS	1 st	<u>Kiran</u>
12	25A31A4411	K. Venkatesh	DS	1 st	<u>K. Venkatesh</u>
13	25A31A4448	M. Dhrit	DS	1 st	<u>M. Dhrit</u>
14	24A31A44136	M. Lakshmi Narayana Rao	DS	1 st	<u>M. Lakshmi Narayana Rao</u>
15	24A31A4463	V. Veerabhadra	DS	1 st	<u>V. Veerabhadra</u>
16	24A31A4464	B. Manoj	DS	1 st	<u>Manoj</u>
17					
18					
19					
20					
21					
22					
23					
24					

K. Armani
K. S. Prakash
 Name of the Student Coordinator

[Signature]
 Signature of the Faculty Coordinator