A REPORT OF

AI4S
ACADEMIC AND INDUSTRIAL POPULAR LECTURE SERIES

ORGANIZED BY

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION

ATAL BIHARI VAJPAYEE VISWAVIDYALAYA, BILASPUR(C.G.)

FOR THE STUDENTS OF THE DEPARTMENT

BY

THE EXPERTS FROM ACADEMIA AND INDUSTRY

SUPPORTED BY

ARTIFICIAL INTELLIGENCE (AI) CLUB

CONVENER

DR. H. S. HOTA

HOD

DEPT. OF CSA

CO-CONVENER

MR. JEETENDRA KUMAR

ASST. PROF.

DEPT. OF CSA

ABOUT LECTURE SERIES

The AI4S Academic and Industrial Popular Lecture Series was an event organized by the Department of Computer Science and Application at Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur (C.G.). The lecture series, held from 12th April to 10 May 2024, was designed to provide students with insights from experts in both academia and industry. The event was supported by the Artificial Intelligence (AI) Club, coordinated by Mr. Jeetendra Kumar, Assistant Professor in the Department, and convened by Dr. H. S. Hota, Head of the Department.

The primary objectives of the AI4S lecture series were:

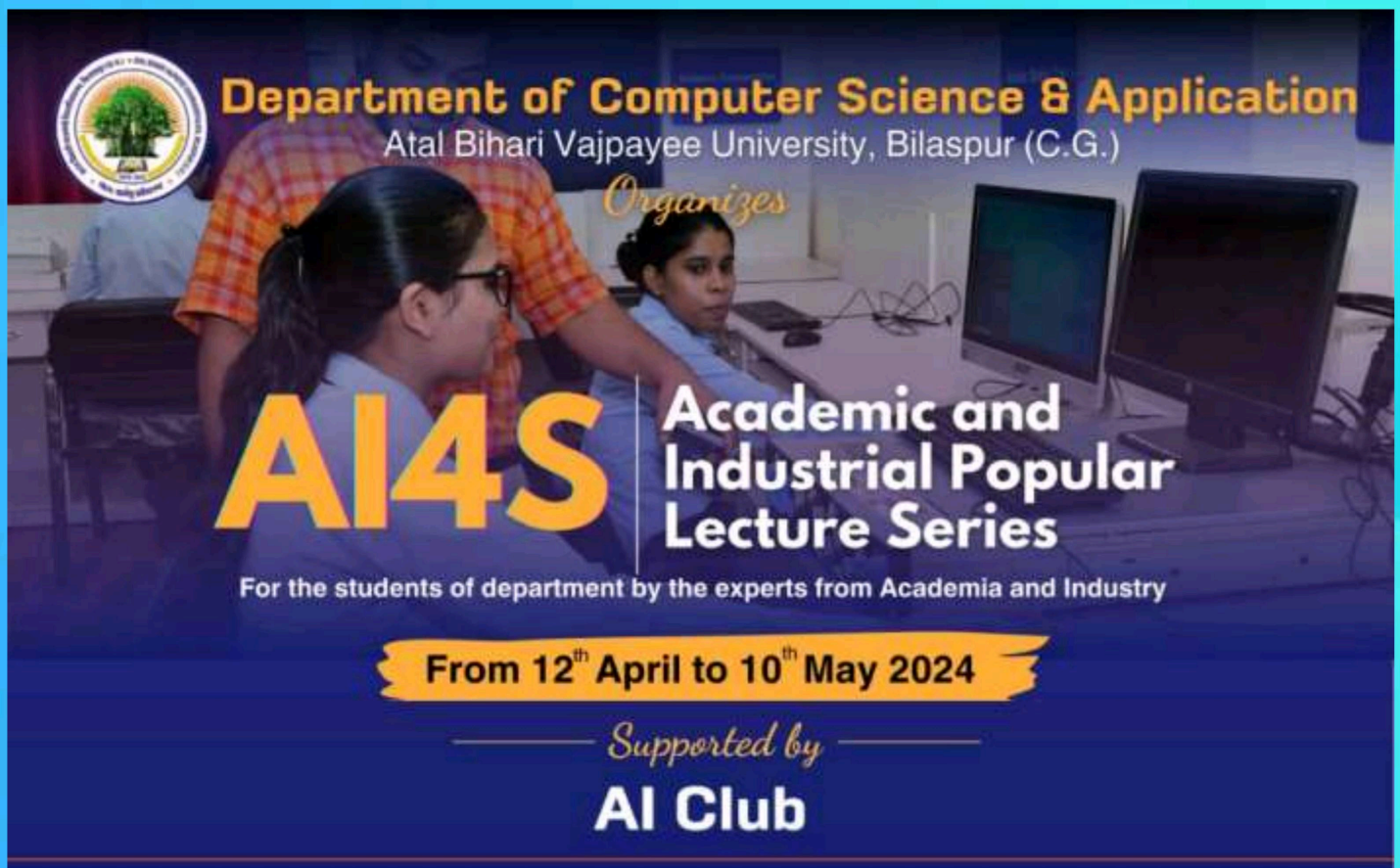
- ✓ To bridge the gap between academic learning and industrial application.
- ✓ To expose students to the latest trends and developments in the field of Artificial Intelligence (AI).
- ✓ To provide a platform for students to interact with experts from academia and industry.
- ✓ To enhance the practical knowledge of students by learning from real-world AI applications and case studies.

The lecture series featured a range of topics covering various aspects of AI. The AI4S lecture series successfully achieved its objectives by providing students with comprehensive insights into both the theoretical and practical aspects of AI. The interaction with industry professionals and academic experts enriched the learning experience, giving students a broader perspective on the applications and implications of AI technologies. Feedback from participants indicated a high level of satisfaction with the quality of the lectures and the relevance of the topics covered. Students appreciated the opportunity to engage with experts and expressed a keen interest in more such events in the future.

The AI4S Academic and Industrial Popular Lecture Series was a significant initiative by the Department of Computer Science and Application at Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur. The support from the AI Club, coordinated by Mr. Jeetendra Kumar, and the leadership of Dr. H. S. Hota, ensured the event's success. The lecture series not only enhanced the students' understanding of AI but also inspired them to pursue further studies and careers in this dynamic field.

The Department looks forward to organizing more such events to continue fostering a vibrant academic and industrial collaboration, promoting innovation and excellence in the field of Artificial Intelligence.

TENTATIVE SCHEDULE



Department of Computer Science & Application

Atal Bihari Vajpayee University, Bilaspur (C.G.)

Organizes

AI4S | Academic and Industrial Popular Lecture Series

For the students of department by the experts from Academia and Industry

From 12th April to 10th May 2024

Supported by

AI Club

18.04.2024

Programming in C & C++

For B.Sc. (Hons) CS II Sem

19.04.2024

Programming in Python

For B.Sc. (Hons) CS IV Sem

20.04.2024

Artificial Intelligence and Machine Learning

For MCA-II Sem, M.Sc. CS - II Sem, B.Sc. (Hons) CS IV Sem, & B.Sc. (Hons) CS VI Sem

01.05.2024

Data Communication and Networking

For M.Sc. CS II Sem and MCA II Sem

08.05.2024

Data Structure using C & C++

For B.Sc. CS IV Sem and MCA II Sem

AI

Convenor Dr. H. S. Hota
Professor & Head, Dept. of CSA

Co-Convenor Mr. Jeetendra Kumar
Asst Professor, Dept. of CSA

LECTURE-1

EXPERT- Dr. VINEET AWASTHI,

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)

On April 18, 2024, the Department of Computer Science and Application at Atal Bihari Vajpayee Viswavidyalaya, Bilaspur, hosted the inaugural lecture of the AI4S Academic and Industrial Popular Lecture Series. The event featured Dr. Vineet Awasthi, an Assistant Professor from the Department of CSIT at Guru Ghasidas Vishwavidyalaya, Bilaspur, who presented on the topic "Programming in C & C++." The lecture was attended by students from the B.Sc. (Hons) CS II Semester.

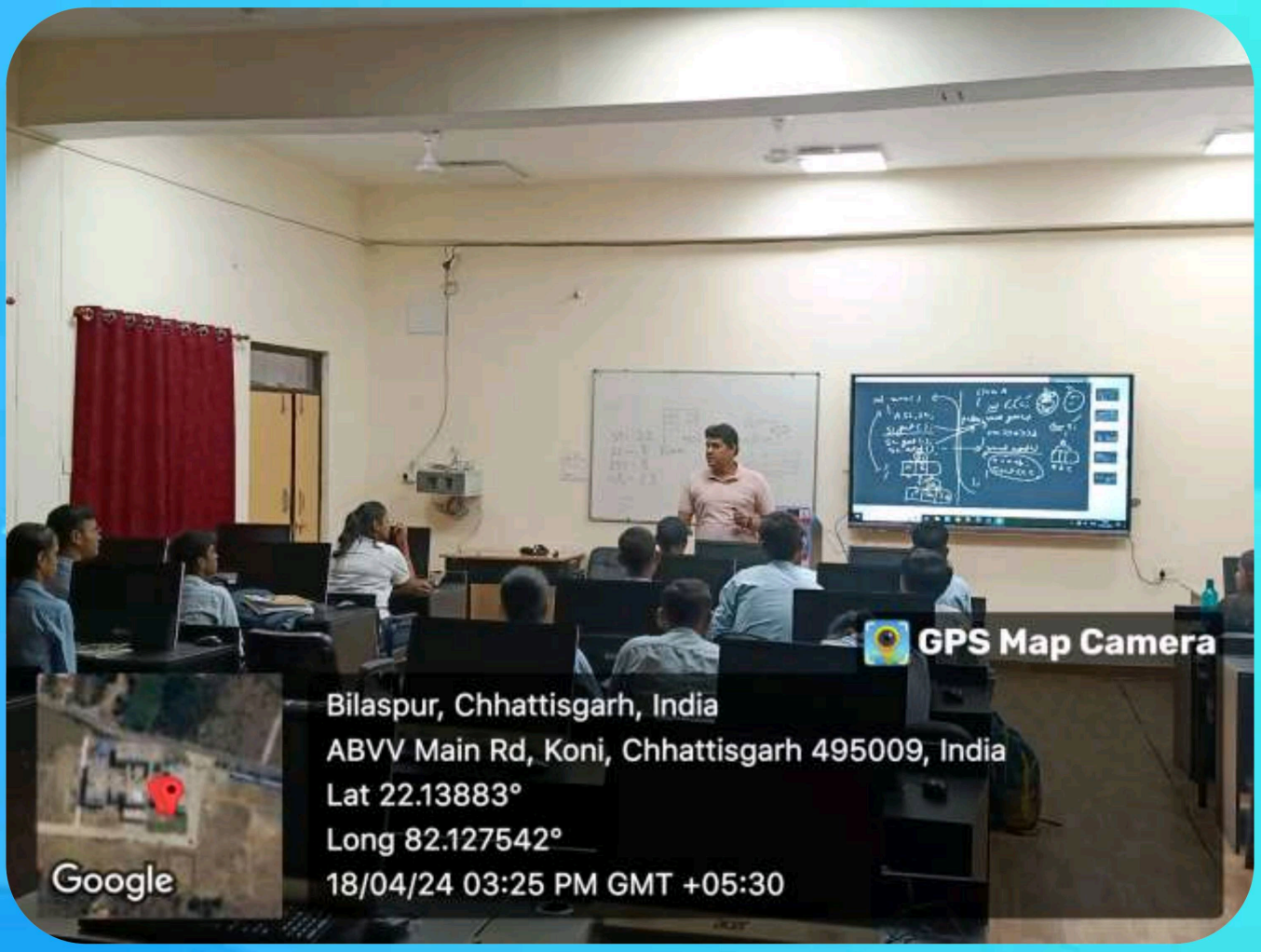
Dr. Awasthi began by introducing the C programming language, discussing its historical context and foundational concepts such as syntax, data types, variables, control structures, functions, arrays, and pointers. He then transitioned to C++, explaining its enhancements over C, particularly the introduction of Object-Oriented Programming (OOP). He covered core OOP principles like classes, objects, inheritance, polymorphism, and encapsulation, providing practical examples to illustrate these concepts.

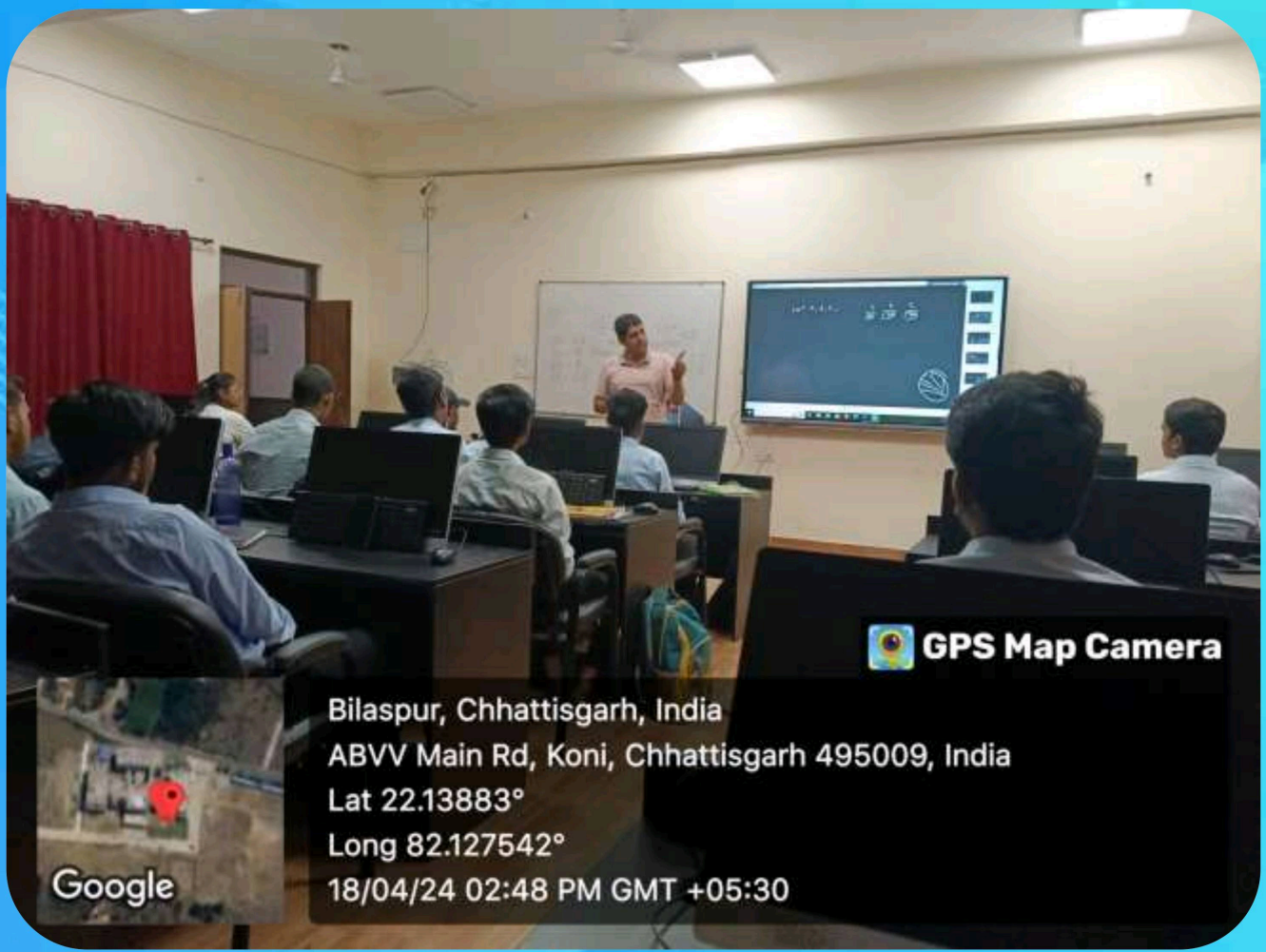
The lecture also touched on advanced features of C++, including templates, exception handling, and the Standard Template Library (STL). Dr. Awasthi emphasized the significance of these features in developing robust and efficient software applications. Practical applications and examples were demonstrated to bridge theoretical knowledge with real-world programming challenges.

The session concluded with an interactive Q&A, where students engaged with Dr. Awasthi on various programming-related topics and career opportunities in software development. His detailed responses and encouragement fostered a deeper interest in programming among the attendees.

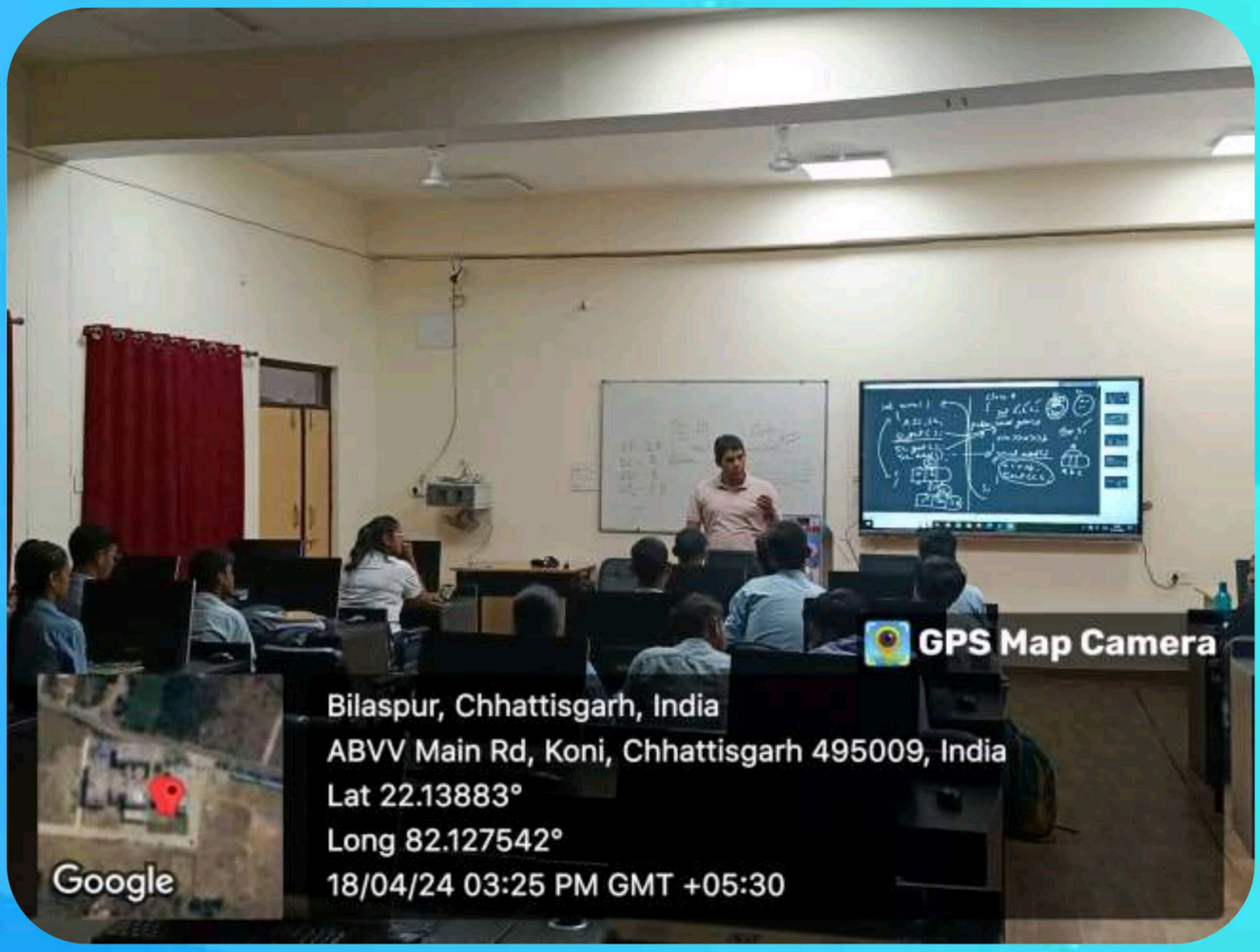
Overall, the lecture was highly informative and inspirational, laying a strong foundation in C and C++ programming for the students. The Department of Computer Science and Application plans to continue this series with more lectures to further enrich the students' learning experience.

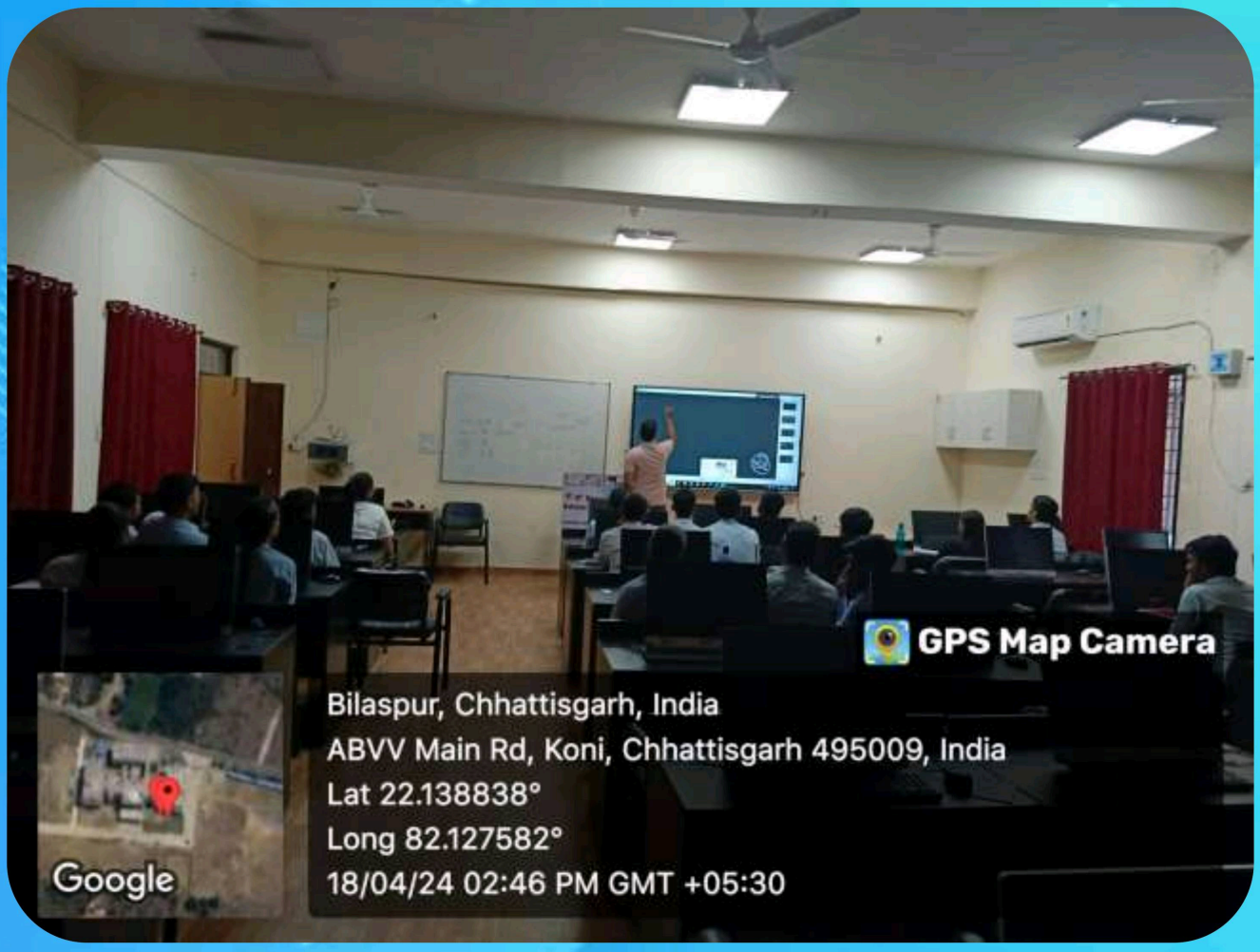
LECTURE-1 PHOTOGRAPHS



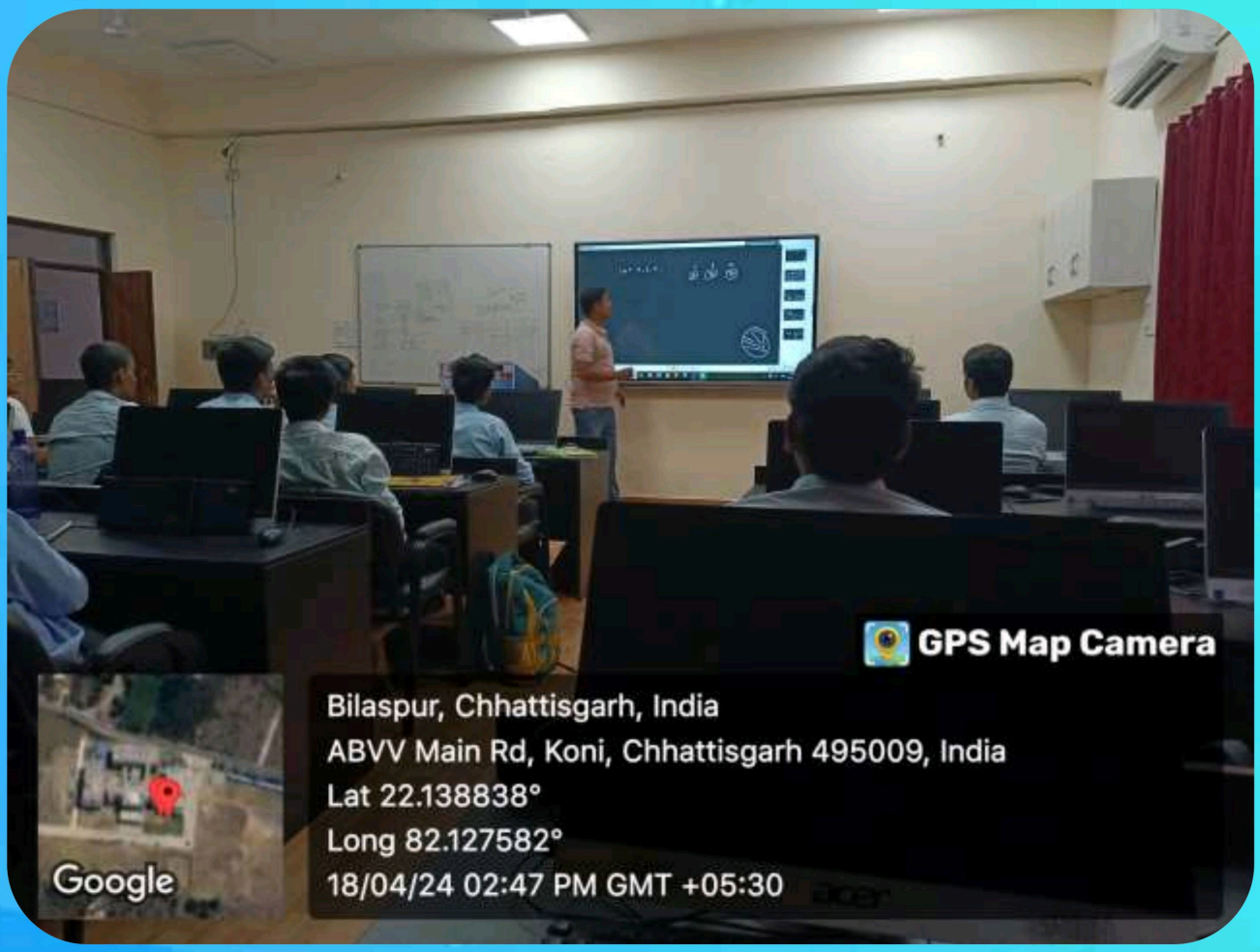


LECTURE-1 PHOTOGRAPHS





LECTURE-1 PHOTOGRAPHS



LECTURE-2

EXPERT- Dr. AKHILESH SHRIWAS,

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)

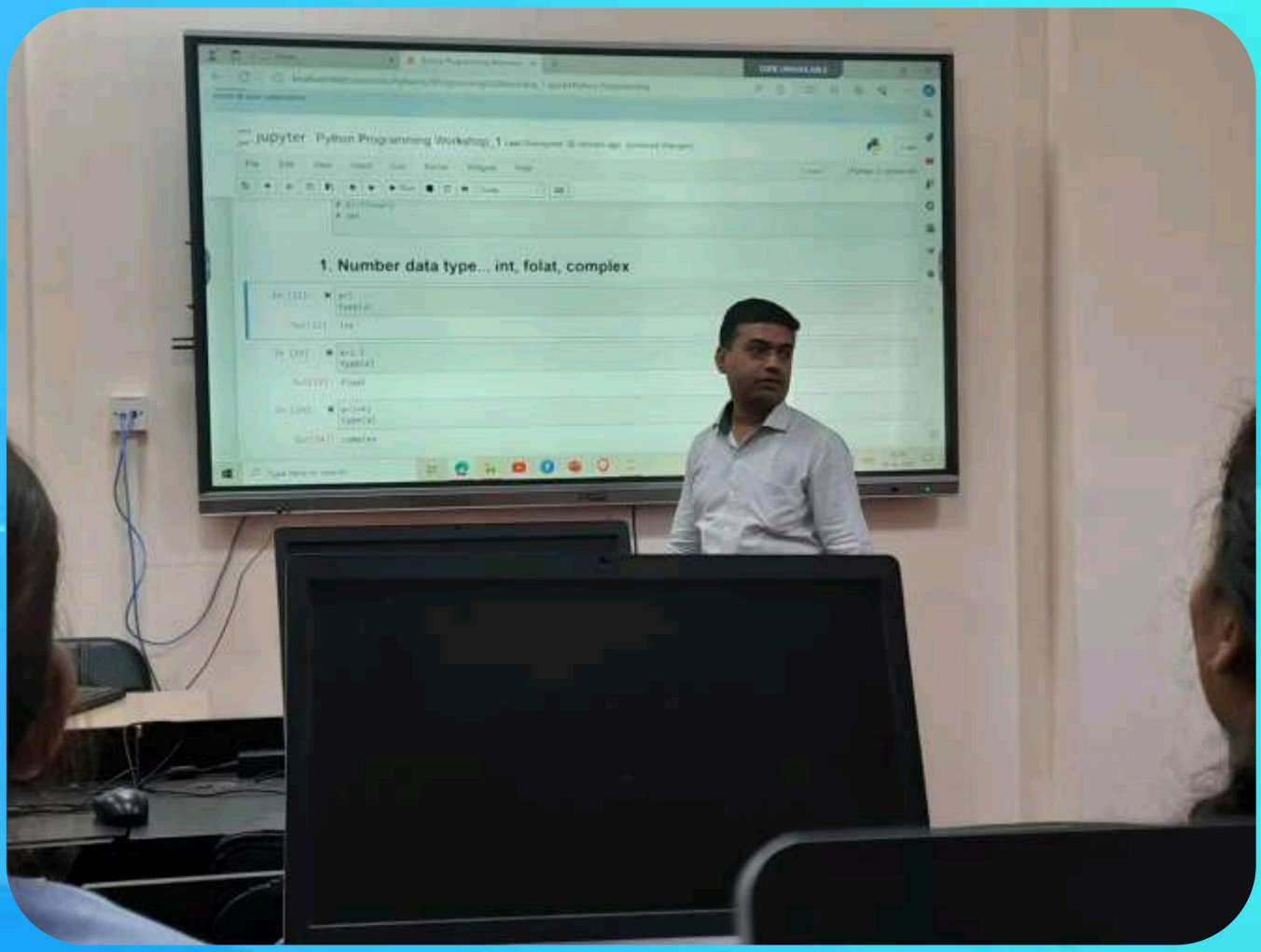
On April 19, 2024, the Department of Computer Science and Application at Atal Bihari Vajpayee Viswavidyalaya, Bilaspur, organized the second lecture of the AI4S Academic and Industrial Popular Lecture Series. The lecture was delivered by Dr. Akhilesh Shriwas, an Assistant Professor in the Department of CSIT at Guru Ghasidas Vishwavidyalaya, Bilaspur. The topic of the lecture was "Programming in Python," and it was attended by all students of the B.Sc. (Hons) CS IV Semester.

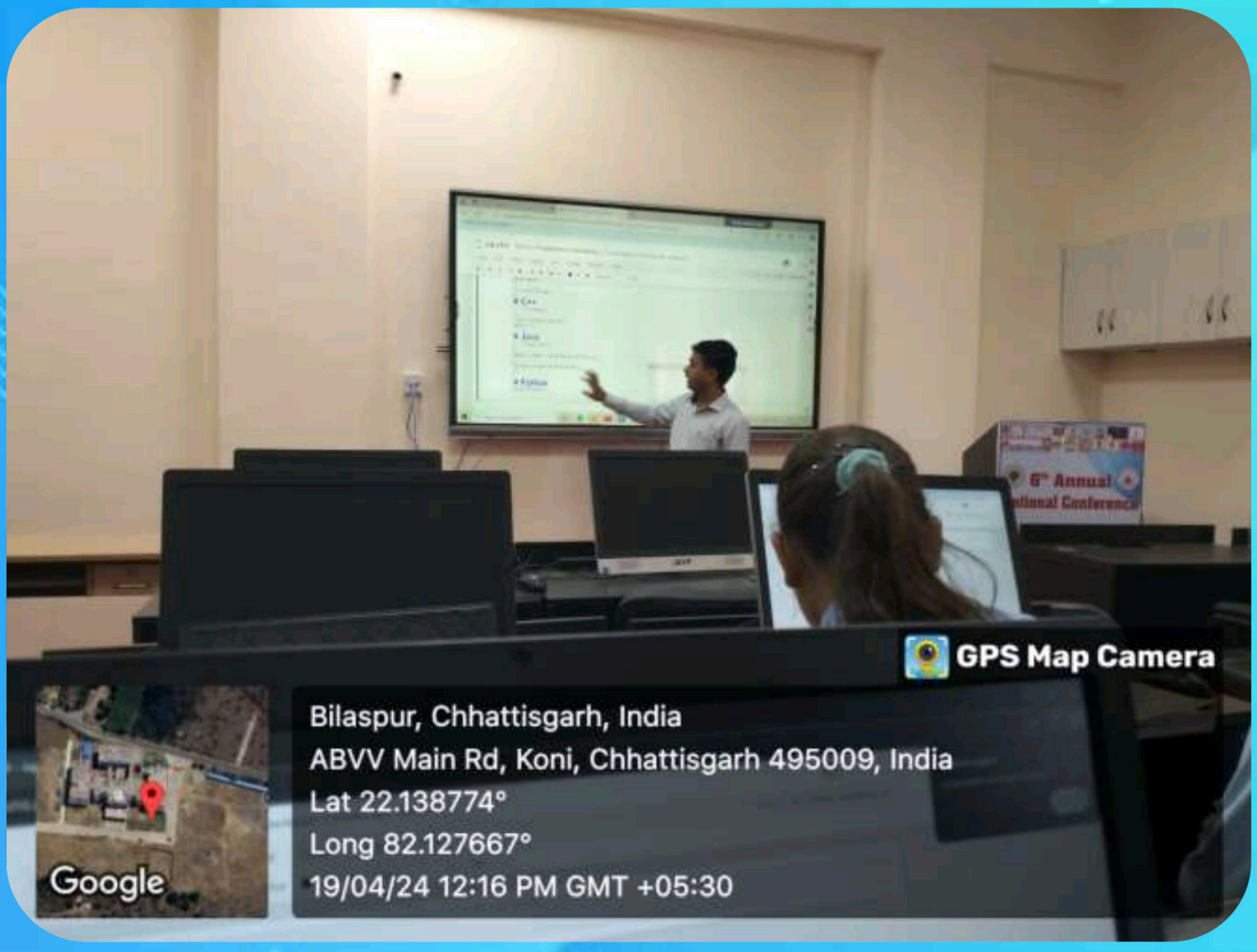
Dr. Shriwas began by introducing Python, discussing its origins, development, and the reasons behind its widespread popularity, such as its simplicity, readability, and versatility. He covered basic syntax and data types, including integers, floats, strings, and booleans, emphasizing the importance of writing clean and readable code. Dr. Shriwas then explained control structures like if-else statements, for loops, and while loops, using practical examples to illustrate their application. The lecture also covered functions and modules, highlighting the significance of modular programming.

Dr. Shriwas detailed Python's built-in data structures—lists, tuples, sets, and dictionaries—showing how these can be used to efficiently manage and manipulate data. He provided an overview of Object-Oriented Programming (OOP) principles in Python, including classes, objects, inheritance, and polymorphism, with practical demonstrations. File handling in Python was also discussed, with examples of reading from and writing to files. Dr. Shriwas introduced popular Python libraries like NumPy, Pandas, and Matplotlib, which are essential for data analysis and visualization, and briefly covered web development frameworks such as Django and Flask.

The session concluded with an interactive Q&A, where students posed questions about Python programming, its applications, and career opportunities in software development. Dr. Shriwas’s detailed responses and encouragement greatly motivated the students. Overall, the lecture was highly informative and well-received, providing a solid foundation in Python programming and inspiring further exploration in the field.

LECTURE-2 PHOTOGRAPHS





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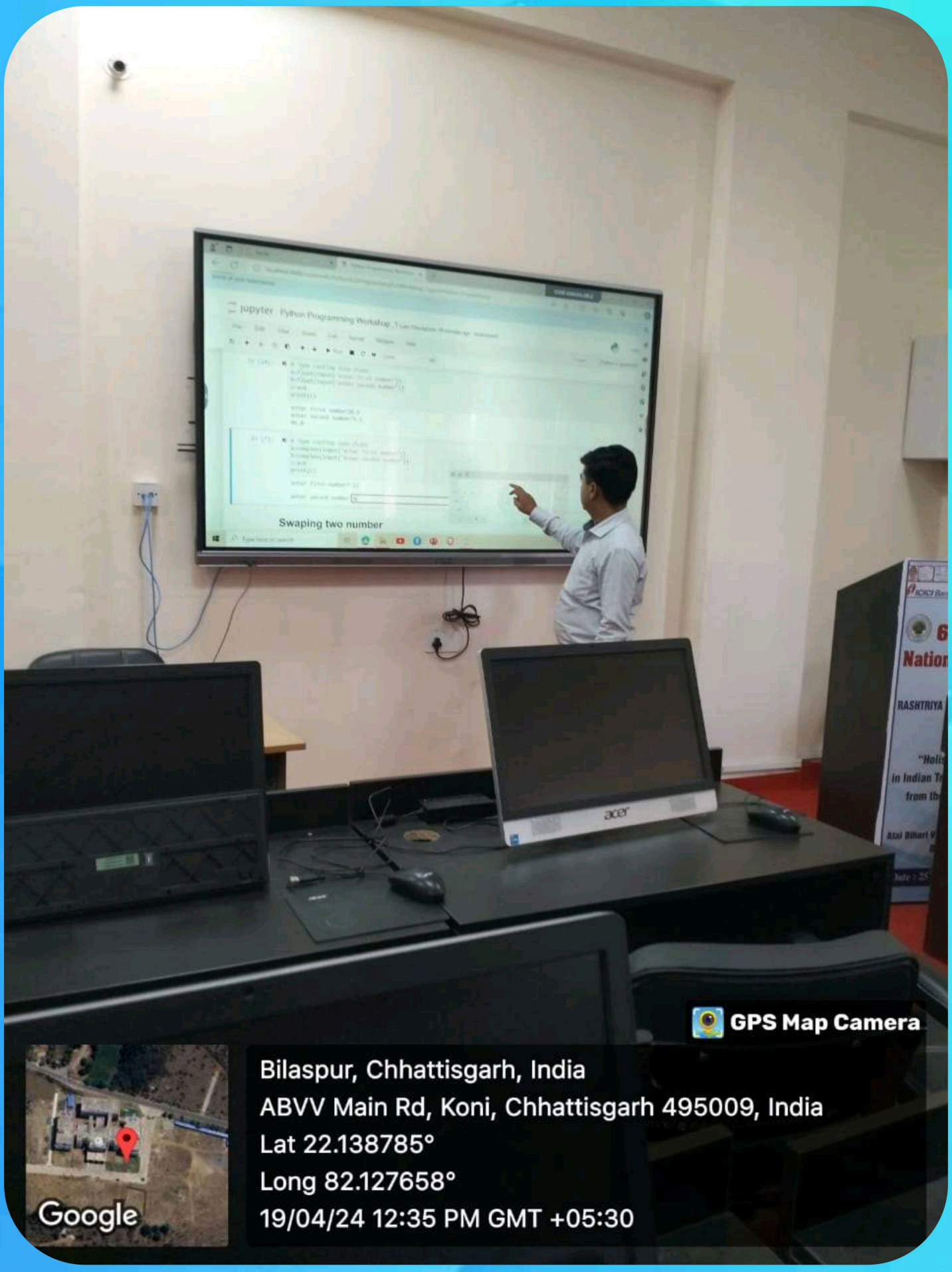

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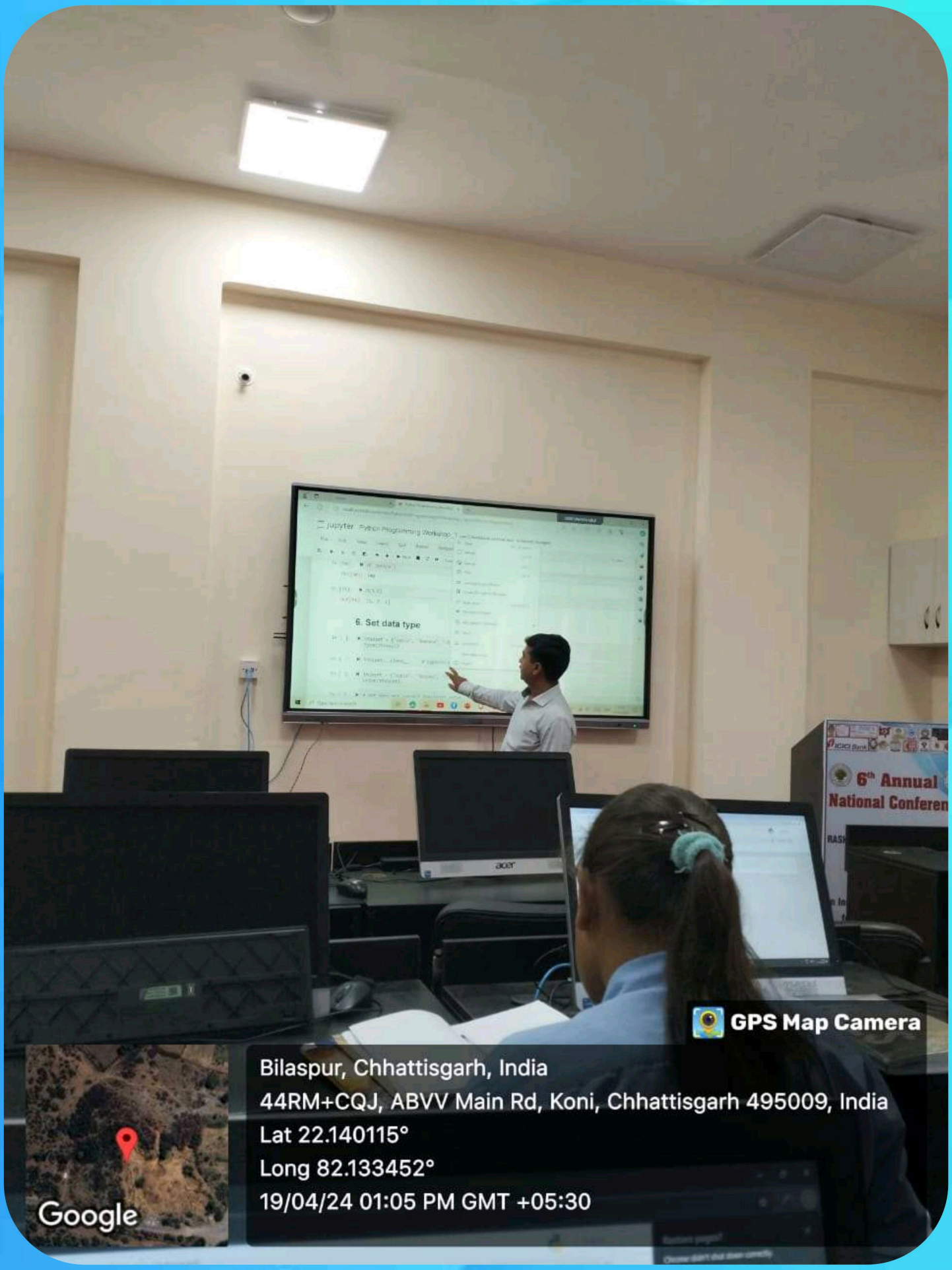

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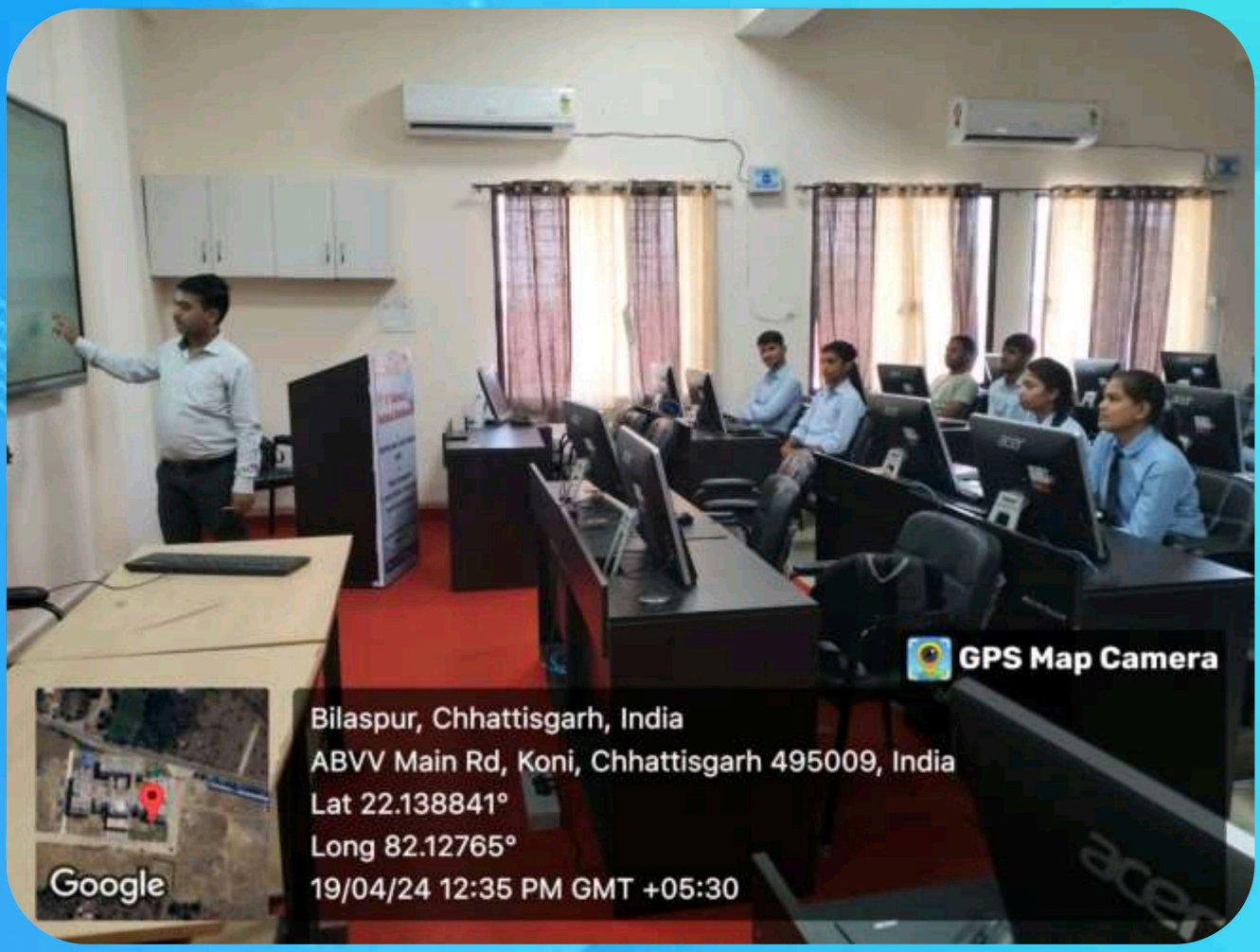

LECTURE-3

EXPERT- Dr. PUSHPLATA PUJARI,

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)

On April 20, 2024, the Department of Computer Science and Application at Atal Bihari Vajpayee Viswavidyalaya, Bilaspur, organized the first lecture in the AI4S Academic and Industrial Popular Lecture Series. The lecture was delivered by Dr. Pushplata Pujari, an Associate Professor from the Department of CSIT at Guru Ghasidas Vishwavidyalaya, Bilaspur. The session focused on "Artificial Intelligence and Machine Learning" and saw enthusiastic participation from students of MCA-II Semester, M.Sc. CS - II Semester, B.Sc. (Hons) CS IV Semester, and B.Sc. (Hons) CS VI Semester.

Dr. Pujari provided an in-depth exploration of several key topics related to Artificial Intelligence and Machine Learning:

i. Intelligence
ii. Artificial Intelligence
iii. Machine Learning
iv. Applications of Machine Learning
v. Types of Machine Learning
vi. Supervised Machine learning Algorithms
vii. Unsupervised Machine learning Algorithms
viii. Performance Evaluation

The lecture concluded with an interactive Q&A session, where students posed insightful questions about the practical implementation of AI and ML, career opportunities in the field, and future trends. Dr. Pujari provided detailed responses, encouraging students to delve deeper into AI and ML studies and research.

The first lecture of the AI4S Academic and Industrial Popular Lecture Series was a great success. Dr. Pushplata Pujari’s expertise and engaging presentation provided students with a comprehensive understanding of Artificial Intelligence and Machine Learning. The event not only enhanced the knowledge of the attendees but also inspired them to explore the vast potential of AI and ML in various sectors.

LECTURE-3 PHOTOGRAPHS

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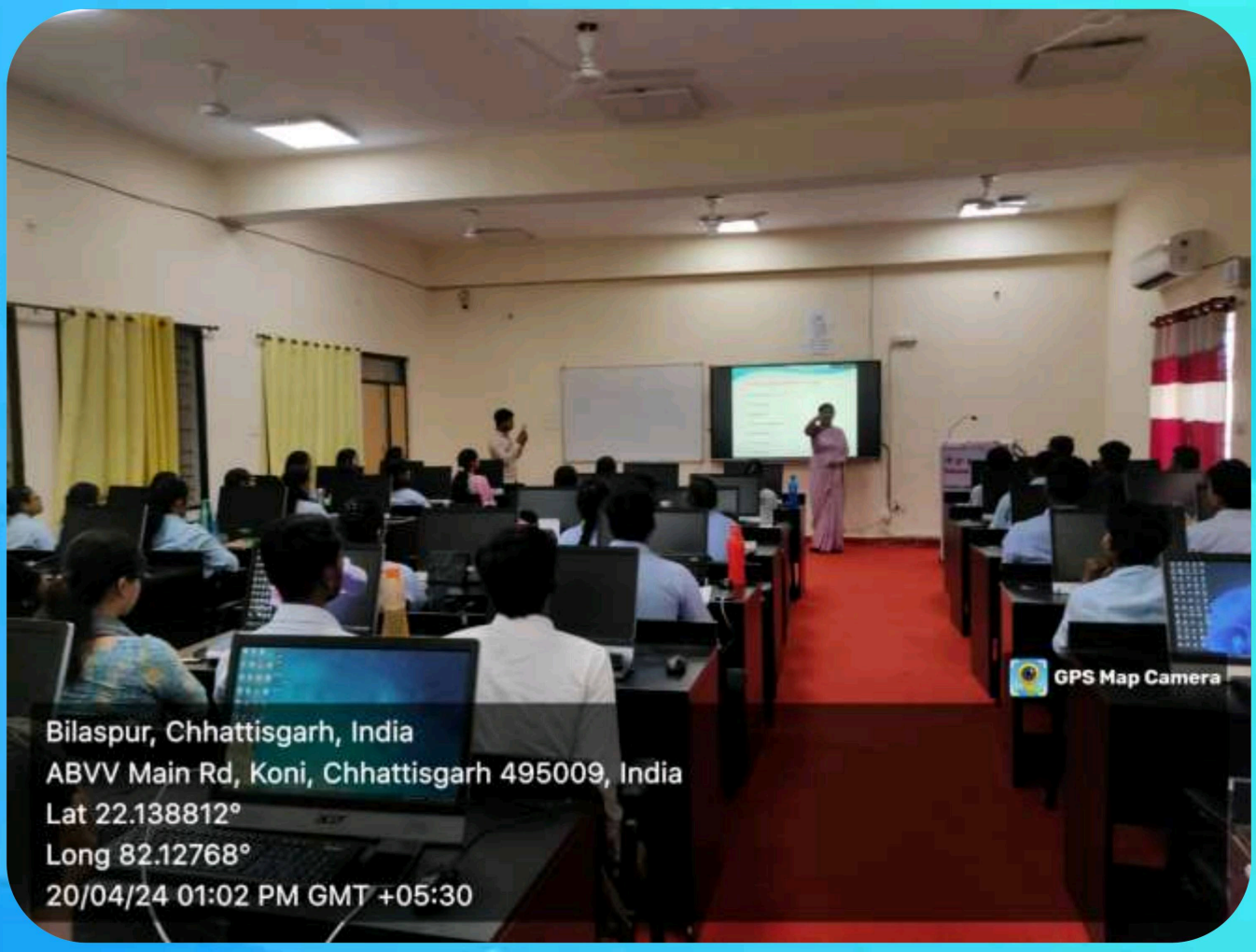


LECTURE-4

EXPERT- Mr. SATISH NEGI,

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)

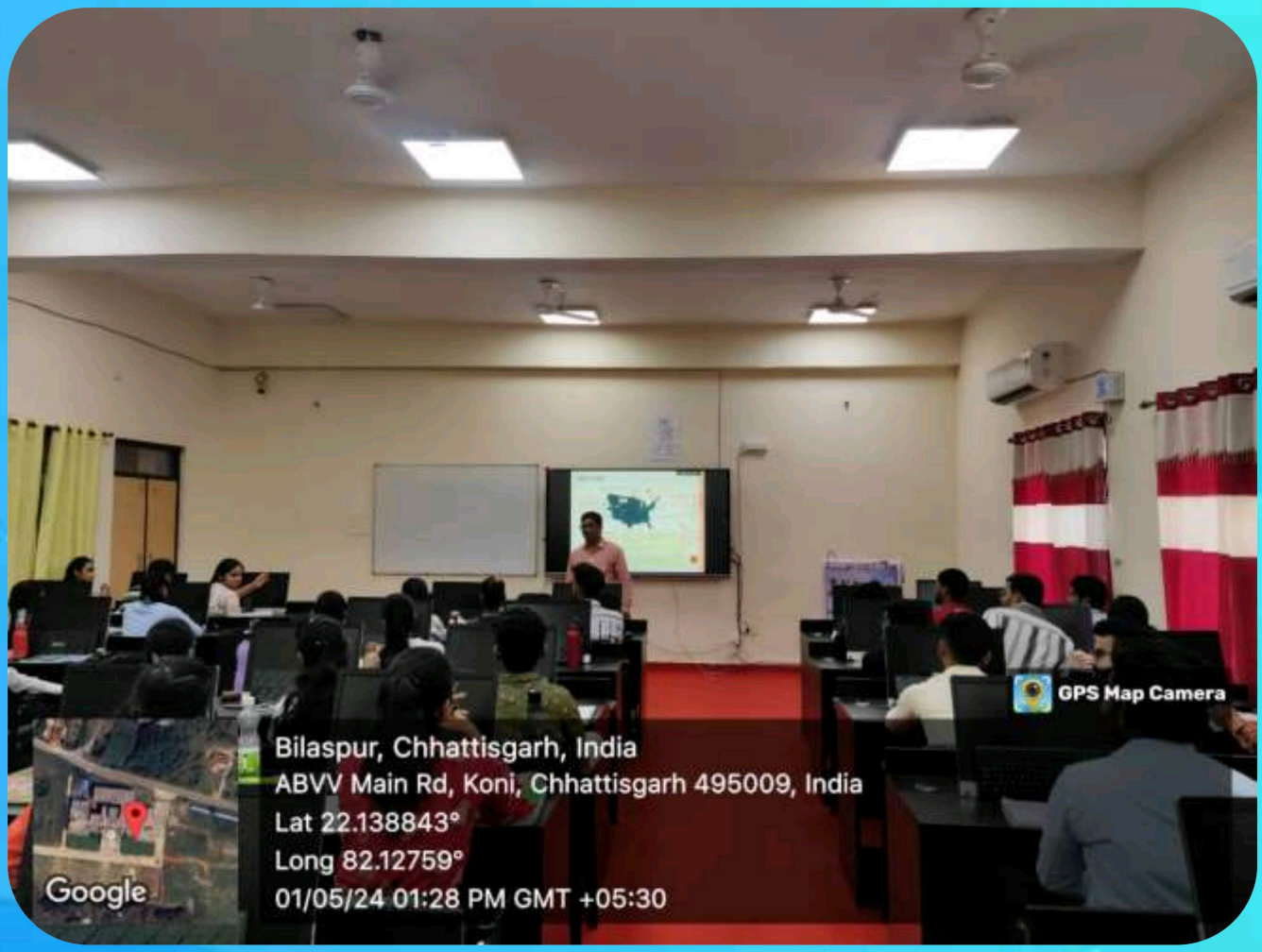
On May 1, 2024, the Department of Computer Science and Application at Atal Bihari Vajpayee Viswavidyalaya, Bilaspur, hosted the fourth lecture of the AI4S Academic and Industrial Popular Lecture Series. This lecture, presented by Mr. Satish Negi, an Assistant Professor at Guru Ghasidas Vishwavidyalaya, Bilaspur, focused on the topic of "Data Communication and Networking." The session was attended by all students of M.Sc. CS II Semester and MCA II Semester. Mr. Negi commenced the lecture with an overview of data communication principles, explaining the fundamental concepts of how data is transmitted and received in various forms. He delved into the different types of networks, including LAN, WAN, and MAN, and discussed their respective characteristics and uses.

Furthermore, Mr. Negi elaborated on networking models and protocols, emphasizing the OSI and TCP/IP models, and their significance in facilitating communication across diverse networks. He highlighted the importance of each layer in the models, detailing how data encapsulation and decapsulation occur. The lecture also covered various networking devices such as routers, switches, and hubs, explaining their roles in ensuring efficient data flow within and between networks.

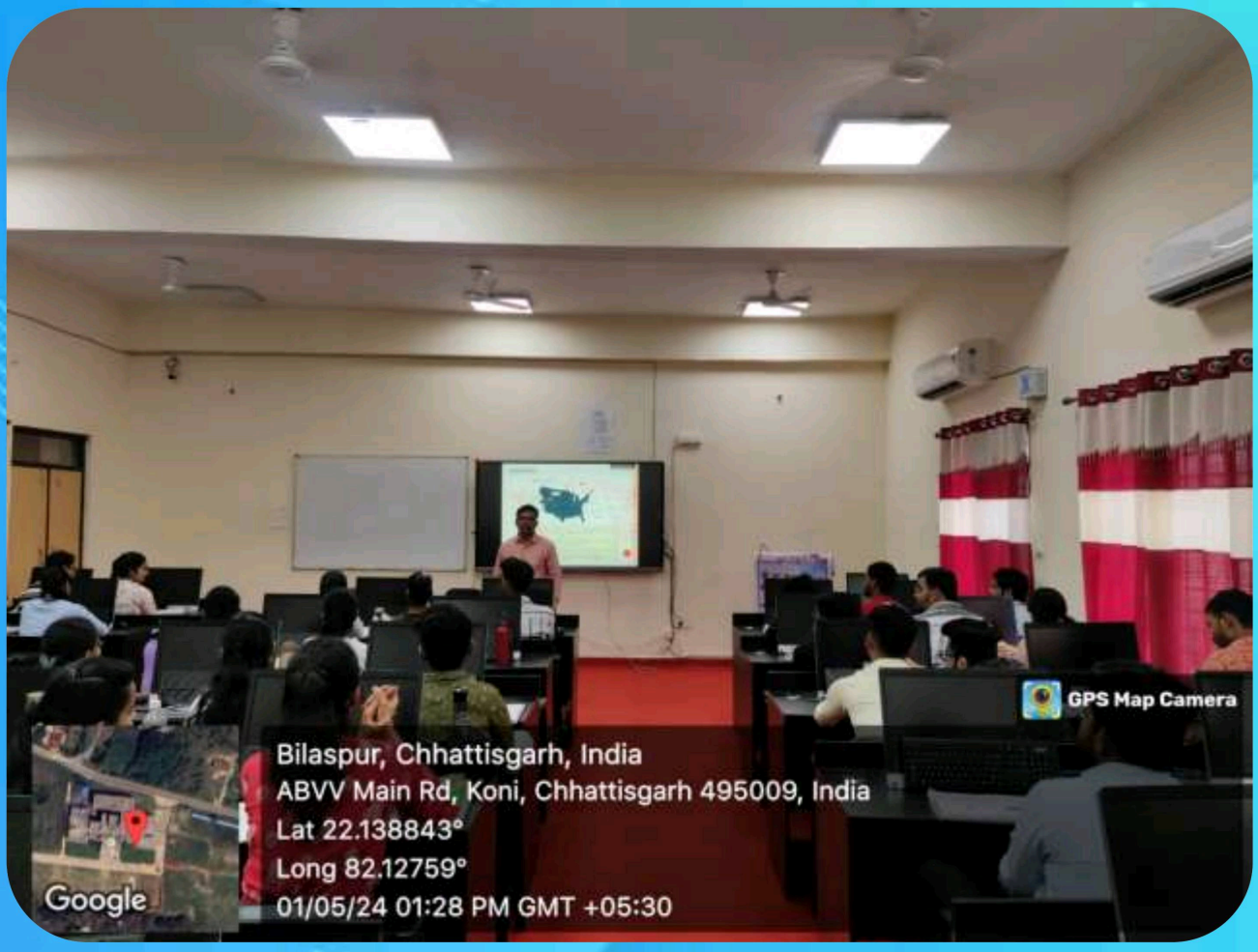
Mr. Negi presented real-world applications and case studies to illustrate the practical implications of data communication and networking. He discussed contemporary topics such as network security, addressing the various threats and preventive measures essential for protecting data integrity and privacy. The lecture concluded with an interactive Q&A session, where students engaged with Mr. Negi on advanced networking concepts and industry trends, gaining valuable insights into the practical aspects of the field.

The event concluded with a vote of thanks by Mr. Jeetendra Kumar, who expressed gratitude to Mr. Negi for his enlightening presentation and to the students for their active participation. Overall, the lecture was highly educational and engaging, providing students with a comprehensive understanding of data communication and networking, and inspiring them to further explore this critical area in computer science.

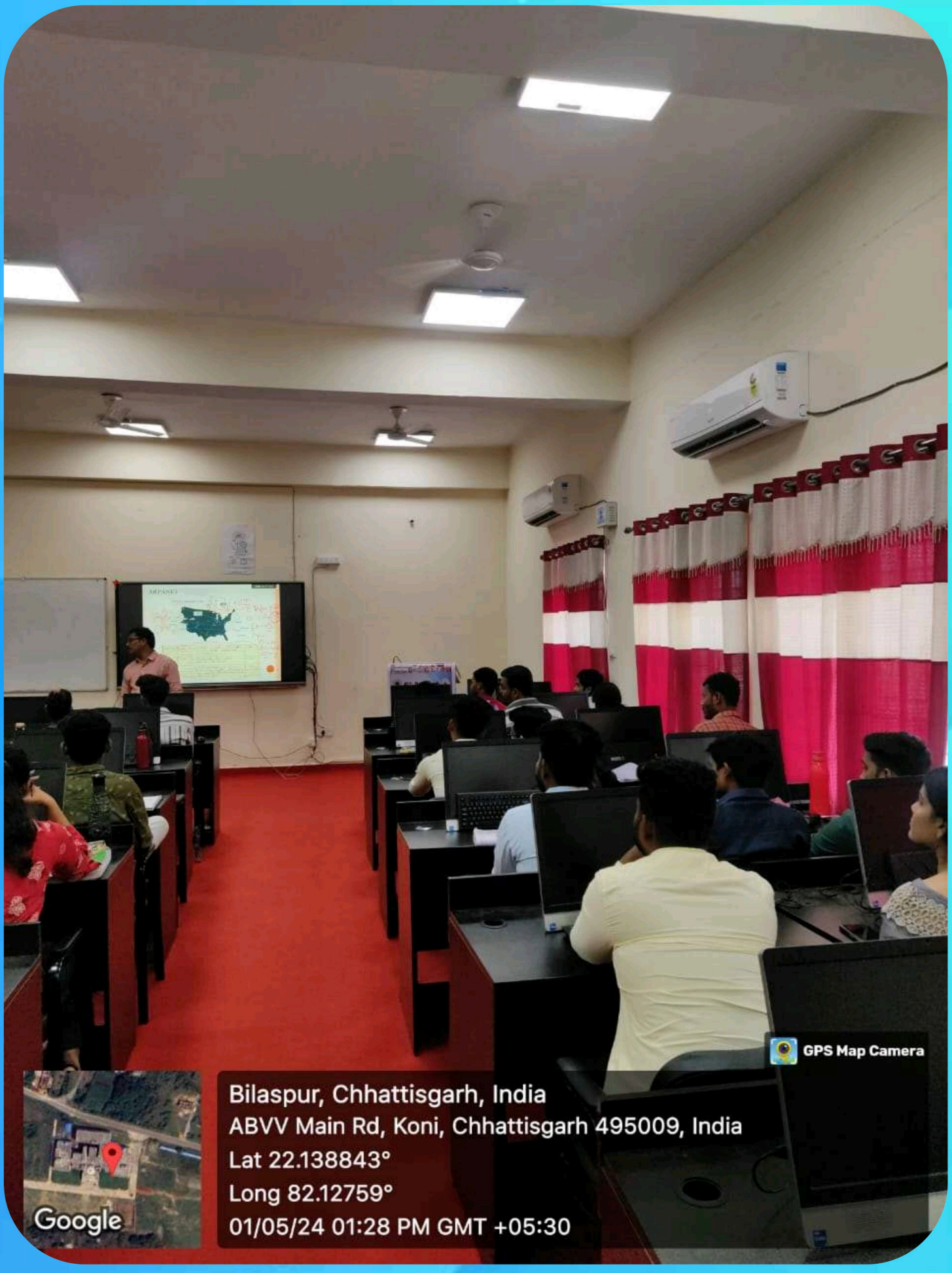
LECTURE-4 PHOTOGRAPHS



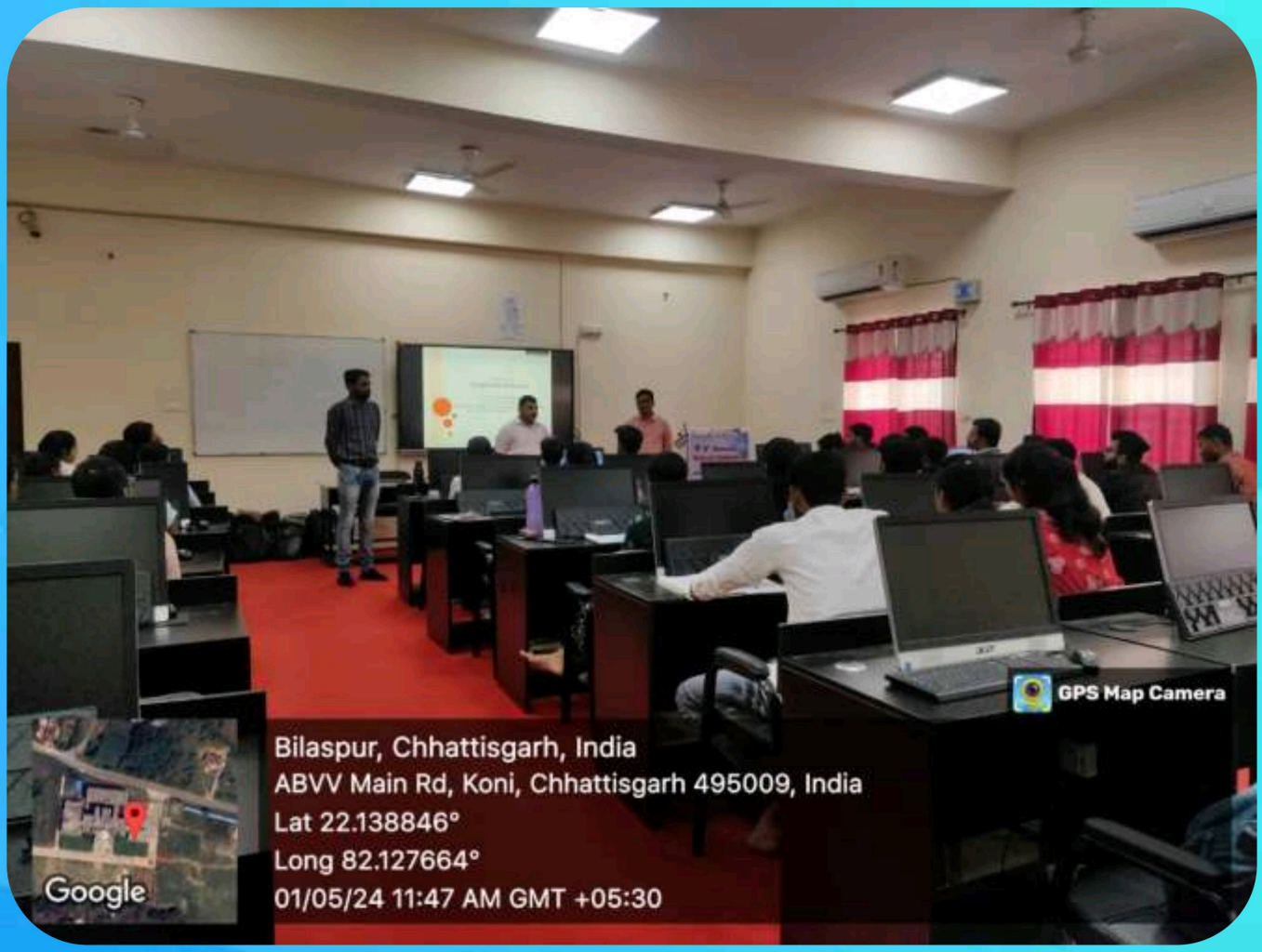
LECTURE-4 PHOTOGRAPHS



LECTURE-4 PHOTOGRAPHS



LECTURE-4 PHOTOGRAPHS



LECTURE-5

EXPERT- Dr. RICHA HANDA,

D.P. VIPRA MAHAVIDYALAYA. BILASPUR(C.G.)

On May 8, 2024, the Department of Computer Science and Application at Atal Bihari Vajpayee Viswavidyalaya, Bilaspur, organized the fifth lecture of the AI4S Academic and Industrial Popular Lecture Series. Dr. Richa Handa, an Assistant Professor at D.P. Vipra Mahavidyalaya, Bilaspur, delivered an insightful lecture on the topic "Data Structure using C & C++." The session was attended by all students of B.Sc. CS IV Semester and MCA II Semester. Dr. Handa began the lecture with an introduction to data structures, emphasizing their importance in organizing and managing data efficiently. She provided a comprehensive overview of various data structures, including arrays, linked lists, stacks, queues, trees, and graphs, explaining their respective functionalities and use cases.

Dr. Handa delved into the implementation of these data structures using C and C++, highlighting the syntax and nuances of each language. She demonstrated how to write efficient code for basic operations such as insertion, deletion, and traversal in different data structures. The lecture also covered advanced topics like balanced trees (AVL trees), hash tables, and graph algorithms (DFS and BFS), illustrating their applications in solving complex computational problems.

Throughout the session, Dr. Handa provided practical examples and coding snippets to help students grasp the concepts better. She emphasized the significance of choosing appropriate data structures based on the problem requirements to optimize performance and resource utilization. The lecture concluded with an engaging Q&A session, where students asked questions about specific data structure implementations and challenges they faced while programming. Dr. Handa's thorough explanations and real-world examples greatly enhanced the students' understanding of the subject.

Overall, the fifth lecture of the AI4S series was highly educational and well-received. Dr. Richa Handa's expertise and effective teaching methods provided the students with a solid foundation in data structures using C and C++. This lecture not only reinforced their theoretical knowledge but also inspired them to apply these concepts in their future projects and coursework.