

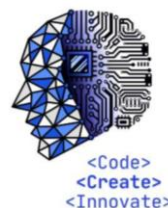
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**SCHOOL OF
ENGINEERING**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**



REPORT ON **PyLIB Workshop** Conducted by

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)**

28th February 2025

TIMINGS: 8.45AM to 4.30PM

Convener:

1. Dr. Amit Bhatt, Vice Chancellor, DSU.
2. Dr Puttamadappa C, Professor & Registrar.
3. Dr. Udaya Kumar Reddy K R, Professor & Dean SoE.
4. Dr. Ramesh R Galigekere, Professor & Dean Academics.
5. Dr. Kousalya Govardhanan, Professor & Dean R&D.
6. Dr. Jayavrinda Vrindavanam V, Professor and Chairperson CSE(AIML).

Organising committee:

1. Prof. PRADEEP KUMAR K, Assistant Professor, Department of CSE (AI & ML).
2. Dr. VEGI FERNANDO A, Associate Professor, Department of CSE (AI & ML).
3. Mr. AMITABH THAKUR, CSE (AIML) 4th sem Student.
4. Ms. RUTU PATIL, CSE (AR), 4th sem student.
5. Mr. ANIRUDH IYER, CSE (AIML) 4th sem Student.
6. Mr. AYUSH SINGH, CSE (AIML) 4th sem Student.

Report

Introduction

The PyLIB Workshop was successfully conducted by a student and attended by approximately 200 students. The workshop aimed to provide hands-on experience with essential Python libraries such as NumPy, Pandas, and Matplotlib, which are widely used for data analysis, scientific computing, and visualization. Additionally, an engaging project on JARVIS was implemented in the afternoon session, showcasing the application of these libraries in real-world scenarios.

Opening Remarks

Before the event officially began, **Dr. Bahubali, Professor, Dept. of CSE (AIML), SoE, DSU**, delivered an insightful talk on how these fundamental concepts help students in their **day-to-day life**.

Following this, **Dr. Vinuthan, Associate Professor**, highlighted the importance of **strong fundamental knowledge** and its role in **placement activities**. His address emphasized how mastering these basic concepts is crucial for career development and job readiness.

Prof. Pradeep Kumar, the Event Coordinator, then provided an overview of the **activities conducted by the department** and upcoming initiatives aimed at the **betterment and enrichment of students' academic journey**. His remarks motivated students to actively participate in such technical workshops to enhance their learning experience.

After these insightful sessions, the **Student Coordinator** took over the workshop and initiated the technical sessions.

Objectives of the Workshop

The primary objectives of the PyLIB Workshop were:

- To introduce students to NumPy, Pandas, and Matplotlib and their applications in data analysis.
- To provide hands-on coding experience and real-time problem-solving skills.
- To implement a practical project (JARVIS) using Python to enhance students' understanding of AI-based applications.
- To encourage peer learning and student-led knowledge sharing.

Workshop Schedule

Morning Session: Introduction to Python Libraries

The workshop began with a brief introduction to Python and its significance in data science and machine learning. The student facilitator provided an insightful presentation on the following topics:

1. NumPy: Numerical Computing in Python

- Introduction to NumPy and its importance in data manipulation.
- Working with arrays, array indexing, and slicing.
- Performing mathematical operations and broadcasting.
- Hands-on exercises covering matrix operations and numerical computations.

2. Pandas: Data Analysis and Manipulation

- Understanding DataFrames and Series.
- Handling missing data and data cleaning techniques.
- Data visualization using Pandas.
- Implementing real-world datasets for analysis.

3. Matplotlib: Data Visualization

- Introduction to Matplotlib and different types of plots.
- Creating line charts, bar charts, scatter plots, and histograms.
- Customizing plots for better readability and presentation.
- Practical demonstration of data visualization techniques.

Afternoon Session: JARVIS Project Implementation

The second half of the workshop focused on implementing an AI-based project inspired by JARVIS (Just A Rather Very Intelligent System). This session included:

- Basics of Speech Recognition and Text-to-Speech (TTS) in Python.
- Integrating Python libraries such as SpeechRecognition, pyttsx3, and OpenAI APIs.
- Creating a simple voice assistant capable of performing basic commands like opening applications, fetching weather reports, and answering general queries.
- Hands-on practice where students implemented their mini-JARVIS system.

Key Takeaways

By the end of the workshop, students had:

- Acquired practical knowledge of Python libraries for data science.
- Gained experience in data manipulation, visualization, and analysis.
- Developed confidence in implementing AI-based voice assistants.
- Understood the potential of Python in real-world applications.
- Engaged in collaborative learning and problem-solving.

Student Feedback

The PyLIB Workshop received overwhelmingly positive feedback from participants. Some key highlights from student testimonials include:

- "The hands-on exercises helped me understand NumPy and Pandas better."

- "Implementing JARVIS was an exciting experience, and I now feel confident to explore AI further."
- "The workshop was well-organized, and the student facilitator explained the concepts in a clear and engaging manner."

Conclusion

The PyLIB Workshop was a great success, demonstrating the power of peer-led learning and practical application of Python libraries. With a high turnout of 200 students, the event effectively enhanced students' programming skills and introduced them to the world of AI applications. The enthusiastic participation and the successful implementation of a mini-JARVIS project highlight the impact of this workshop. Future sessions on advanced Python topics and AI implementations are encouraged to further enrich the learning experience of students.

KEY HIGHLIGHTS

270+ participants actively registered and participated, demonstrating strong interest and enthusiasm.

- Participants gained hands-on experience with NumPy, Matplotlib, and Pandas.
- The JARVIS Project received widespread appreciation for its innovation and practical application.
- The workshop provided a collaborative environment, encouraging teamwork and problem-solving skills.
- Industry experts shared valuable insights into the applications of these tools in real-world scenarios.
- Participants suggested that more time should be allotted for hands-on practice in future workshops.

OUTCOMES & IMPACT

The Machine Learning Workshop Series has had a significant impact on students, fostering technical expertise and practical skills in data analysis, visualization, and machine learning. Participants developed a strong understanding of NumPy, Matplotlib, and Pandas, which are essential tools for data science and machine learning. The JARVIS Project demonstrated the potential of integrating hardware and AI, inspiring students to explore innovative solutions.

The workshop also provided invaluable industry exposure, as students had the opportunity to interact with industry experts and learn about real-world applications.

Feedback Report

Average rating :
By participants of sem 4,6,2
(4.20)

5 ⭐ Rating Feedback (60 votes)-

Sukaina Fatema

-The Jarvis demo. It was truly impressive. Additionally the engaging introduction and the way the concepts were explained despite the fast pace was wonderful.

Sabareesh S P

-The most valuable aspect of the workshop was the clear and structured explanation of AI/ML concepts, making it easier to understand both the theoretical foundations and practical applications.

Vaishnavi

-I enjoy this workshop a lot and it's very useful for 1st year students. I have learnt python basics and I loved the Jarvis project, it was truly fantastic. I will attend all the sessions for sure. I thank our seniors who have put a lot of effort into this and are making this workshop very interesting..

4 ⭐ Rating Feedback (80 votes)

Meghana R

-It helped me improve my coding skills with hands-on practice

Shreya H Rao

-Now that basics are done I feel like it'll be easier to start with AIML seemed to be very vast I didn't know where to start so this was a good opening .The session was also very engaging I could see the effort being put

Shaina Noushad

-Got to learn that there are so many different libraries used for different purposes that i have yet to learn.

3 ⭐ Rating Feedback (21 votes)

Shlok

-That they are giving their time to teach us tech oriented concept

Maruthi

-The way they explained the topics with cracking jokes in between so the session was interesting ☐.

Poorvi G Reddy

-Since I am still in sem 2 I have gained some knowledge about the libraries

Overall Rating of the Workshop:

164 responses

 Copy chart



What did you find **most valuable** about the workshop?

164 responses

Jarvis

Everything

Jarvis

Pandas

Everything

-

Gallery session of the Event



