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Dept. of Artificial Intelligence & Machine Learning

Report on

LECTURE SERIES/ EXPERT TALK REPORT

DEPARTMENT OF AI&ML AND IEEE STUDENT BRANCH PESITM LECTURE SERIES

Lecture series 01

ON

"SCOPE AND FUTURE OF AI IN INDUSTRY"

Date:

09-10-2024

Event Coordinator

Mr. Sandeep Telkar R Asst Prof., Dept of AIML





Event Overview

The Department of Artificial Intelligence and Machine Learning hosted an engaging and insightful session on October 9, 2024, featuring Mr. Pavan Purohit, an experienced AI Engineer at IBM Bangalore. This session aimed to expose students to the vast and dynamic field of Artificial Intelligence (AI), delving into its real-world applications, career opportunities, and the skills necessary for success in the domain. The event provided a platform for students to learn about the transformative role of AI across various industries and how they can position themselves as future leaders in this rapidly evolving space.

Objectives of the Event

The session's primary goals included:

- Familiarizing students with the **real-world applications of AI** in key sectors such as healthcare, finance, retail, and manufacturing.
- Providing insights into the **current trends and future opportunities** in AI, showcasing how industries are adopting AI to solve complex problems and optimize processes.
- Highlighting the **career pathways** in Artificial Intelligence and Machine Learning and the technical and soft skills required to succeed.
- Inspiring students to actively engage in **innovative projects, internships, and AI competitions**, promoting hands-on learning and real-world experience.
- Equipping students with the knowledge and skills necessary to **excel in their AI careers**, fosters a mindset of continuous learning and adaptability.

Key Objectives and Highlights of the Event

1. Current Landscape of AI in Industry

• Widespread Adoption:

Mr. Purohit emphasized that AI is no longer confined to tech giants like Google or Amazon. Its adoption has become mainstream, revolutionizing industries like **healthcare, finance, retail, manufacturing, and logistics**. AI-driven solutions are now integral to operations across these sectors, reshaping how businesses operate and deliver value.

• Data as the Foundation:

The session highlighted the critical role of **data** in AI's success. Industries are increasingly leveraging vast datasets to train, test, and refine AI models, showcasing how data integrity and availability form the backbone of AI systems.

• Role of AI Engineers:

AI engineers are at the heart of this transformation, playing a pivotal role in:

• Deploying robust AI models.

- Ensuring data integrity and pre-processing.
- Enhancing machine learning algorithms for scalability and efficiency. Their contributions are indispensable to the successful implementation of AI across various domains.

2. Future Scope of AI in Various Sectors

• Healthcare:

AI is revolutionizing healthcare by enabling breakthroughs in medical diagnosis, personalized treatment plans, and drug discovery. Technologies like image recognition are critical for early disease detection, while natural language processing (NLP) streamlines medical record-keeping and improves patient care.

- Finance: The finance sector is leveraging AI for fraud detection, risk assessment, and trading algorithms, ensuring greater efficiency and reducing risks. Mr. Purohit stressed the growing reliance on AI-driven automation for operational excellence in financial services.
- Retail and Customer Service: From personalized product recommendations to virtual shopping assistants, AI is reshaping customer experiences. AI-powered systems are optimizing inventory management and streamlining supply chains in retail.
- Manufacturing:

AI's role in predictive maintenance, quality control, and process automation is to improve productivity and reduce downtime. Smart manufacturing, powered by AI, is setting new benchmarks for efficiency and precision.

Career Guidance for AIML Students

Mr. Purohit provided valuable career guidance tailored to the unique aspirations and challenges of AIML students:

• Technical Skills:

Students were encouraged to strengthen their understanding of machine learning algorithms, neural networks, and essential programming languages like Python. Building a strong technical foundation was emphasized as a prerequisite for success.

- Specialized Knowledge: Exploring specialized domains such as natural language processing (NLP), computer vision, or robotics was highlighted as a pathway to becoming highly sought-after AI professionals.
- Real-World Projects: Practical experience through projects, internships, and AI competitions was deemed essential for understanding the nuances of AI implementation and enhancing employability.
- Soft Skills:

He underscored the importance of communication, teamwork, and collaboration. As AI engineers often work with multidisciplinary teams, strong interpersonal skills can significantly impact career growth.

Conclusion

The event concluded with Mr. Purohit encouraging students to adopt a mindset of continuous learning and adaptability. With the ever-evolving landscape of AI, staying updated with the latest advancements and building a portfolio of innovative projects will be instrumental for success.

AI, with its transformative potential, offers diverse career opportunities, enabling individuals to contribute meaningfully to society. The session inspired AIML students to embrace the exciting challenges of AI, equipping them with the tools and knowledge to carve their paths in this promising field.

Photo Gallery:





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Dept. of Artificial Intelligence & Machine Learning

Report on

LECTURE SERIES/ EXPERT TALK REPORT

DEPARTMENT OF AI&ML AND IEEE STUDENT BRANCH PESITM LECTURE SERIES

LECTURE SERIES 02

ON

"introducing full stack to 3^{rd} semester students"

Date:

09-10-2024

Event Coordinator

Mr. Sandeep Telkar R Asst Prof., Dept of AIML





Introduction

The Department of Artificial Intelligence & Machine Learning (AIML), PES Institute of Technology & Management, Shivamogga, organized an insightful and enriching introductory session on Full Stack Development on October 9, 2024. This session was led by Mr. Sufiyan Ahmed, a 5th-semester student from the department, aimed at introducing the fundamental concepts and technologies that constitute full stack development. The target audience for this session was the 3rd-semester AIML students, who are in the initial phase of their academic journey in the field of Artificial Intelligence and Machine Learning.

The event was conceived with the goal of equipping students with a basic understanding of the tools, technologies, and methodologies used in building both the front-end and back-end of web applications, which are essential skills for deploying AI and ML models in real-world applications. The session was well-received, as it provided valuable insights into how full stack development can complement AI and ML technologies.

About Full Stack Development

Full Stack Development is the process of designing and developing both the client side (front-end) and the server side (back-end) of a web application. Full stack developers are proficient in both the user interface and the underlying server-side processes that manage data and user requests. For students pursuing AI and ML, it is crucial to understand how to integrate AI models with web applications and create user-friendly interfaces that can deploy these models effectively.

Key Highlights of the Session

1. Overview of Full Stack Development

Mr. Sufiyan Ahmed began the session by introducing the concept of full stack development. He explained that full stack development involves both front-end and back-end programming. The front-end, or client side, focuses on the visual components and user experience, while the back-end handles the logic, database management, and server-side processing. Understanding full stack development, Mr. Ahmed emphasized, is essential for AIML students as it allows them to deploy their machine learning models in a practical, web-based environment.

2. Importance of Full Stack Development in AIML

Mr. Ahmed outlined the importance of full stack development for AIML students. AI and ML models often require web interfaces for users to interact with them. Therefore, having a basic knowledge of how to develop both the client-side and server-side of a web application is highly beneficial. He also pointed out that most real-world AI applications are deployed in a web environment, making full stack development a valuable skill for students looking to bridge the gap between machine learning models and end-users.

3. Components of Full Stack Development

a. Front-End Development:

The first part of the session focused on front-end development. Mr. Ahmed introduced the foundational technologies of **HTML**, **CSS**, and **JavaScript** that are used to create the structure, design, and interactivity of web pages. He also discussed popular frameworks and libraries such as **React.js** and **Vue.js**, which are widely used to build dynamic and responsive user interfaces. These technologies enable developers to create user-friendly, interactive websites that are essential for modern web applications.

b. Back-End Development:

The second part of the session delved into back-end development. Mr. Ahmed explained that the back-end of a web application is responsible for managing data, handling user requests, and performing server-side logic. He introduced students to server-side programming languages such as **Node.js** and frameworks like **Express.js**, which are commonly used to build scalable back-end systems. He also explained how the back-end is essential for storing and processing data, including the integration of AI models for predictions and recommendations.

c. Database Management:

In the final part of this section, Mr. Ahmed provided an overview of database management, focusing on **MySQL** (a relational database) and **MongoDB** (a NoSQL database). He explained the role of databases in storing and managing data for web applications. Databases are crucial for applications that need to store large volumes of data, such as user information, application settings, and machine learning results. He also touched on the importance of **database connectivity**, particularly when building AI-driven applications that need to interact with stored data.

Essential Tools and Technologies for Full Stack Development

Version Control (Git & GitHub):

Mr. Ahmed emphasized the importance of **version control** in modern software development. He introduced **Git**, a version control system that allows developers to track changes in their code, collaborate with others, and manage code revisions. GitHub, an online platform for hosting Git repositories, was also introduced as a powerful tool for sharing code and collaborating with others in a team environment. Understanding version control is crucial for students working in collaborative environments, especially when building large-scale applications.

APIs (Application Programming Interfaces):

Next, Mr. Ahmed discussed the concept of **APIs**, which enable communication between different parts of an application. He explained that APIs allow data to be exchanged between the front-end and back-end of a web application, making it possible to send and receive information. This is especially important for web applications that integrate machine learning models, as APIs are used to send user data to a model and retrieve predictions or recommendations.

Deployment Platforms:

The session concluded with an introduction to web application deployment. Mr. Ahmed explained how platforms like **Heroku** and **Netlify** can be used to deploy web applications. These platforms allow developers to host their applications online, making them accessible to users around the world.

He highlighted the significance of deployment in the real world, as it allows developers to showcase their AI models and applications to a broader audience.

Guidance and Resources for Beginners

Learning Path:

To assist the students in beginning their journey into full stack development, Mr. Ahmed recommended a structured learning path. He suggested starting with the basics of **HTML**, **CSS**, and **JavaScript**, then progressing to front-end frameworks like React.js. After gaining proficiency in front-end development, students should move on to back-end frameworks like **Node.js** and explore databases like MySQL and MongoDB.

Online Resources:

Mr. Ahmed also shared a list of valuable online resources for self-paced learning. Websites such as **freeCodeCamp**, **MDN Web Docs**, and **Codecademy** were recommended for beginners to get hands-on practice with web development. These platforms provide interactive tutorials and exercises that guide students through building projects step by step.

Practice with Projects:

Finally, Mr. Ahmed encouraged students to build small projects as a way to apply their learning practically. Simple projects such as building a **calculator**, a **note-taking app**, or a **basic game** can help solidify concepts and improve problem-solving skills. By working on such projects, students will gain experience and confidence in using the technologies they have learned.

Conclusion

The session on **Full Stack Development** proved to be an immensely valuable learning experience for the 3rd-semester AIML students. Mr. Sufiyan Ahmed effectively introduced the core concepts and technologies involved in full stack development, providing a solid foundation for students to build upon. He highlighted the importance of full-stack development for AIML students, particularly in the context of deploying AI and ML models in real-world applications.

Students left the session with a deeper understanding of the tools and technologies required to create web applications, as well as guidance on how to begin learning and applying these concepts. The practical insights shared by Mr. Ahmed gave the students a clear starting point for further exploration into the world of full stack development.

Photo Gallery:





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Dept. of Artificial Intelligence & Machine Learning

Report on

Lecture series/ expert talk report

DEPARTMENT OF AI&ML AND IEEE STUDENT BRANCH PESITM LECTURE SERIES

Lecture series 03

ON

"Scope & future of full stack developer in it indsutry"

Date:

15-10-2024

Event Coordinator

Mr. Sandeep Telkar R Asst Prof., Dept of AIML





Event Details:

- Event Title: Session on Scope and Future of Full Stack Development
- Speaker: Mr. Shravan, Full Stack Developer at Arisa Global, Bangalore
- Date of Event: [Insert Date]
- Target Audience: 5th-semester students, Artificial Intelligence & Machine Learning (AIML)
- Venue: PES Institute of Technology & Management, Shivamogga

Abstract

A session on **Full Stack Development** was conducted for the 5th-semester AIML students at PES Institute of Technology & Management, Shivamogga, with the objective of providing an in-depth understanding of the scope and career opportunities in full stack development. The speaker, **Mr. Shravan**, an experienced full stack developer from Arisa Global, Bangalore, shared valuable insights into the growing demand for full stack developers and the skills needed to succeed in this domain. The session covered key technologies, industry trends, and career paths for aspiring developers.

Introduction

The rapid advancement in the field of web development has led to the increasing demand for professionals who can handle both front-end and back-end development. **Full Stack Development** is one of the most in-demand skill sets in the IT industry, combining proficiency in both client-side and server-side technologies. This session, organized by the **Department of Artificial Intelligence & Machine Learning**, aimed to introduce the **5th-semester AIML students** to the evolving role of full stack developers and the growing scope of this field in the technology-driven landscape.

Key Highlights of the Presentation

1. Understanding the Role of a Full Stack Developer

• Definition and Responsibilities: Mr. Shravan elaborated on the role of a Full Stack Developer, who is proficient in both front-end and back-end development. A full stack developer manages everything from user interfaces (UI) to databases, ensuring the functionality and performance of the entire application.

• Core Technologies:

He discussed the core technologies essential for full stack development, which include:

- **Front-End:** HTML, CSS, JavaScript, and modern JavaScript frameworks such as React.js or Angular.
- Back-End: Server-side languages like Node.js, Python, and Ruby.
- **Databases: MySQL, PostgreSQL,** and **MongoDB** for data management and storage.

2. Growing Demand for Full Stack Developers in the Industry

• Versatility and Flexibility:

The speaker emphasized that full stack developers are highly sought after due to their ability to work across both front-end and back-end, making them adaptable to various projects and reducing the need for multiple specialized roles within a development team.

• High Employment Potential:

With the growing trend of technology-driven businesses and start-ups, the demand for full stack developers has surged. Companies now prefer individuals who can contribute across all stages of software development.

3. Skills Needed to Succeed as a Full Stack Developer

- Technical Skills:
 - Front-End Skills: Mastery of HTML, CSS, JavaScript, and front-end frameworks like React.js or Angular.
 - **Back-End Skills:** Proficiency in server-side programming languages like Node.js and Python.
 - **Database Skills:** Knowledge of relational (SQL) and non-relational (NoSQL) databases.
- Soft Skills:

Effective communication, problem-solving abilities, and time management are critical, as full stack developers often collaborate with cross-functional teams to deliver successful projects.

• Version Control (Git):

Understanding version control systems such as Git is essential for managing code changes and collaborating effectively in team environments.

4. Future Trends in Full Stack Development

• Cloud-Based Development:

Mr. Shravan discussed how full stack developers are increasingly leveraging cloud platforms like **AWS**, **Google Cloud**, and **Azure** for deploying applications and ensuring scalability based on business needs.

• Low-Code and No-Code Platforms:

The rise of low-code/no-code platforms was also highlighted, enabling developers to accelerate application development and deploy solutions rapidly, making it easier for non-developers to create functional applications.

5. Career Path and Opportunities for Full Stack Developers

• Start-Up Ecosystem:

Start-ups greatly value full stack developers because of their ability to work on multiple aspects of product development. In start-up environments, versatility is key to handling the fast-paced nature of projects with smaller teams.

• Freelancing and Consultancy:

Experienced full stack developers have the option to pursue freelancing or consulting, offering them flexibility and access to a diverse range of projects across industries.

6. Guidance for AIML Students on Full Stack Development

• Foundational Skills:

Mr. Shravan recommended that AIML students focus on building foundational skills in **web development** by learning HTML, CSS, and JavaScript before advancing to frameworks like **React.js** (for front-end) and **Node.js** (for back-end).

• Building Projects:

Hands-on experience through personal projects like building websites, e-commerce platforms, or data-driven applications will solidify their learning and prepare them for the industry.

• Collaborative Learning:

He encouraged students to participate in hackathons, collaborate on open-source projects, and work in teams to gain real-world experience and develop strong portfolios.

Conclusion

The session led by Mr. Shravan offered valuable insights into the exciting and evolving career of full stack development. He effectively communicated the growing demand for full stack developers, the skill set required to excel in this field, and the future trends shaping the profession. For AIML students, this session provided a roadmap for gaining proficiency in full stack development, complementing their expertise in artificial intelligence and machine learning, and opening new career opportunities in the tech industry.

Dept of AIML, PESITM Shivamogga

The session was highly informative, giving students a clear understanding of the role and importance of full stack development in modern web applications. Mr. Shravan's advice and industry insights have undoubtedly prepared the students for future endeavors in the domain of full stack development.

Photo Gallery:





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Report on

LECTURE SERIES/ EXPERT TALK REPORT

DEPARTMENT OF AI&ML AND IEEE STUDENT BRANCH PESITM LECTURE SERIES

Lecture series 04

ON

"FROM CAMPUS TO CAREER: THE IMPACT OF PYTHON IN MODERN INDUSTRIES"

Date:

21-10-2024

Event Coordinator

Mr. Sandeep Telkar R Asst Prof., Dept of AIML





About the Event:

Python has revolutionized the tech industry due to its simplicity, versatility, and robust ecosystem. As an AIML student, mastering Python opens up a wide range of career opportunities, especially in fields such as Artificial Intelligence (AI), Machine Learning (ML), Data Science, and automation. This report captures the key insights shared by **Rahul Majukar**, Senior Analyst at NTT Data, during his session on "Campus to Career: The Impact of Python in Modern Industries."

The objective is to help AIML students understand how Python plays a pivotal role in shaping modern industries and how they can transition from academic learning to a successful career. The event was organized under the guidance and support of the **IEEE Student Chapter at PESITM**, whose continuous efforts in promoting technical knowledge among students made this session highly informative and impactful.

1. Python's Role in Modern Industries

a. Adoption of Python in Industry:

Python has emerged as the most preferred programming language in various sectors, including technology, healthcare, finance, e-commerce, and cybersecurity. Its flexibility, coupled with the growing demand for data-driven solutions, makes Python the language of choice for professionals working with large datasets, developing machine learning algorithms, and automating processes.

b. Key Applications of Python across Industries:

- Data Science and Analytics: Python is the foundation for data manipulation and visualization, with powerful libraries such as Pandas, NumPy, and Matplotlib.
- Artificial Intelligence and Machine Learning: Python dominates the AI and ML space. Libraries like TensorFlow, Keras, and PyTorch make it easier to develop and deploy complex AI models.
- Automation: Python is widely used for automating repetitive tasks, especially in industries like banking, IT services, and logistics, improving efficiency and productivity.

- Web Development: With frameworks like Django and Flask, Python is employed in building secure, scalable web applications for companies worldwide.
- **Cybersecurity:** Python's flexibility allows professionals to create security tools for vulnerability scanning, penetration testing, and network defense.

2. Transition from Campus to Career

a. Demand for Python Professionals:

The job market for Python developers is booming. Industry giants like Google, Facebook, and Amazon, as well as numerous startups, are in constant search of professionals with expertise in Python. For AIML students, Python skills are essential for securing positions in AI, data science, ML, and automation roles. The session emphasized that Python expertise is not just about coding; it's about being able to solve real-world problems efficiently.

b. Key Steps for AIML Students to Transition to Industry:

- Master the Fundamentals of Python: Understand the core concepts such as variables, loops, functions, and data structures. This foundation is crucial for solving complex problems in AI and ML.
- Learn Libraries and Frameworks: Focus on libraries such as Pandas, NumPy, TensorFlow, Keras, and PyTorch. These libraries are at the heart of many AI and data science applications.
- Work on Real-World Projects: During internships and academic projects, work on building machine learning models, data analysis projects, and automation scripts. Projects like recommendation systems, sentiment analysis, or AI-based chatbots will give you hands-on experience.
- **Contribute to Open Source:** Contributing to open-source projects on platforms like GitHub helps build a strong portfolio and connects you to the global Python community.
- Prepare for Industry-Relevant Certifications: While academic learning is essential, industry certifications such as those offered by Google, IBM, or Microsoft in AI and ML can boost employability.

• Networking and Industry Insights: Attend industry webinars, conferences, and meetups to network with professionals. Platforms like LinkedIn and GitHub are also essential for building your professional presence.

3. Conclusion

Python is a cornerstone of modern industries, especially in the fields of Artificial Intelligence, Machine Learning, and Data Science. For 3rd-semester AIML students, gaining proficiency in Python will be the key to unlocking numerous career opportunities. As highlighted by Rahul Majukar, transitioning from campus to career requires a blend of theoretical knowledge and practical experience. By mastering Python and applying it to real-world projects, AIML students can enhance their employability and contribute to shaping the future of technology.

The session has made it clear that Python is not just a programming language; it is a powerful tool for solving industry problems and driving innovation. As students, the next step is to continuously learn, work on projects, and network with industry professionals to stay ahead in this fast-evolving field. We extend our gratitude to **IEEE Mangalore Subsection and IEEE Student Chapter** at PESITM for their invaluable support in organizing this session and making it a successful experience for all participants.

Photo Gallery:



Request for Reimbursement

I have attached the bills for the four events organized as part of the Lecture Series under the Department of Artificial Intelligence & Machine Learning. I kindly request the reimbursement of these expenses.

I would like to express my sincere gratitude to IEEE Mangalore Subsection and IEEE for their continuous support in organizing and facilitating these events. Your cooperation in processing the reimbursement at your earliest convenience would be greatly appreciated.

Thank you for your time and attention.

Item	Quantity	Rate (per unit)	Total Amount
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Tea and Samosa	100 plates	₹30	₹3,000
Pens	100 units	₹10	₹1,000
Notepads	100 units	₹20	₹2,000
Files	100 units	₹40	₹4,000
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