







SRI VENKATESWARA COLLEGE OF ENGINEERING ALUMNI ASSOCIATION OF ELECTRONICS AND COMMUNICATION ENGINEERING











DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALUMNI ASSOCIATION PRESENTS

AN INSIGHT ON REINFORCEMENT LEARNING



TUESDAY

17th OCTOBER 2023



10.30 AM - 12.00 PM

VENUE: Library Seminar Hall

Resource person Mr Rahil Jain

Software Engineer Temenos India Pvt Ltd Alumnus 2017-2021 ECE



in @SVCE Alumni network

COORDINATORS

Dr.D.MENAKA, ASP, ECE Ms. S.KALYANI ,AP, ECE









DATE: 17th October 2023

VENUE: Library Seminar Hall

Event Summary:

Mr. Rahil Jain's engaging presentation on **Reinforcement Learning** was a masterclass in understanding this intricate field, covering a range of topics and offering practical insights. He initiated the discussion by distinguishing between three core learning paradigms: **Supervised Learning**, **Unsupervised Learning**, and **Reinforcement Learning**. In Supervised Learning, he explained, models are trained on labeled datasets to make predictions, while Unsupervised Learning seeks patterns without the use of labeled outputs. However, the crux of his talk was Reinforcement Learning, in which agents learn to maximize rewards through their actions.

One of the key highlights of his presentation was the categorization of Reinforcement Learning into three fundamental components: "Agent," "Action," and "Environment". To make these elements more relatable, Mr. Jain cleverly drew parallels with everyday actions, allowing the audience to grasp the core principles of RL with ease. Furthermore, he explored the nuances of **Deterministic and Stochastic RL**. Deterministic RL, he emphasized, involves actions with **predictable outcomes**, whereas stochastic RL introduces **probabilistic elements**, adding an element of uncertainty to the decision making process.

Within this comprehensive overview, Mr. Jain also introduced the essential concepts of **State Value Function and Action Value Function**. The State Value Function estimates the expected cumulative reward starting from a specific state, offering a sense of a state's overall desirability. Meanwhile, the Action Value Function estimates the expected cumulative reward from a particular state when taking a specific action, aiding the agent in choosing the most rewarding path.









The talk then ventured into the heart of Reinforcement Learning, exploring the two main approaches: **model-based** reinforcement learning and **model-free** reinforcement learning. Model-based RL involves constructing a model of the environment to plan actions effectively, while model-free RL focuses on learning directly from interactions with the environment, without requiring a comprehensive model. Central to Reinforcement Learning is the Bellman Equation, which Mr. Jain highlighted. This equation plays a pivotal role in RL, representing the value of a state by considering the expected reward and the value of the subsequent state. Its application is critical in making informed decisions in an uncertain environment. Mr. Jain did not confine his talk to theoretical concepts alone. He provided real world insights by emphasizing applications of RL, including the control and optimization of **Autonomous helicopters**. This practical touch underscored the significance and vast potential of Reinforcement Learning in everyday life.

In a thoughtful addition to the presentation, Mr. Jain addressed the career aspirations of students who are navigating the complexities of college placements and higher studies. His guidance offered valuable perspectives on career paths and choices in the realm of technology and machine learning. Moreover, Mr. Jain shared intriguing glimpses into the projects he was currently involved in, shedding light on the real-world problems being tackled with RL techniques. These practical examples illustrated the versatility of Reinforcement Learning in solving complex challenges and driving technological innovation.

In conclusion, Mr. Rahil Jain's talk was a comprehensive exploration of Reinforcement Learning, its applications, and the challenges it presents. His guidance on career planning, alongside his project introductions, added a practical dimension to the event. The audience departed with a deeper understanding of the intricacies of RL and a heightened enthusiasm for the possibilities in the world of machine learning and artificial intelligence.





FACULTY CO-ORDINATORS

Dr D Menaka, ASP, ECE Ms S Kalyani , AP, ECE HOD,ECE

Dr.G.A.Sathishkumar



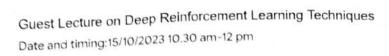
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SRI VENKATESWARA COLLEGE OF ENGINEERING FEEDBACK FROM THE SPEAKER - GUEST LECTURE

DEPARTMENT	: ECE
Name of the Speaker	: Mr Rahil Jail
Designation	: Software Engineer
Institution/University/Organia	sation: Temenos India Prt 41d
Mobile / E-mail	: 9940641886 / vahiljain 1366@gmail.
Title of the Lecture	: Deep Reinforcement Learning
Date	: 17/10/23
Time	: 10:30 to 12:05
Venue	:
Comments by the Speaker	:
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Suggestions for improvement	:
Signature of the Speaker	: PalitTai

Signature of Coordinator

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