I' Storm

K.L.N. College of Engineering, Pottapalayam-630612

(An Autonomous Institution, Affiliated to Anna University, Chennai)

(Department of Information Technology)

June 2022

K.L.N. College of Engineering
i'Storm
Department of Information Technology
SPECIAL INTEREST GROUP
LIVE WITH TECHNOLOGY

PRINCIPAL MESSAGE

It is a matter of great pride and satisfaction for K.L.N. COLLEGE OF ENGINEERING to bring out the News Letter '**I'STORM**' Released from the Department of Information Technology. The College has made tremendous progress in all areas-academic, non-academics, capacity building relevant to staff and students. The College has achieved another milestone in getting NBA (National Board of Accreditation).I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. I express my deep sense of gratitude to Dr. P.Ganesh Kumar, HOD/IT under whose guidance this Technical work has been undertaken and completed within the stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes.

PRINCIPAL
Dr. A.V. RAMPRASAD

THE EDITOR'S DESK

It gives me immense pleasure to note that response to this newsletter of our department **i'STORM** has been overwhelming. The wide- spectrum of articles in different sections gives me a sense of pride that our students and professors possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in articles contributed by them. Commendable job has also been done by the Editorial Board in planning for and producing the Newsletter. My congratulations to the team who took the responsibility for the arduous task most effectively. I am hopeful that this small piece of technical work shall not only develop the taste for reading among students but also develop a sense belonging to the institution as well.

H.O.D(IT)
Dr. P. GANESH KUMAR

NEWS LETTER EDITORIAL BOARD

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OUR COLLEGE:

Vision

To become a Centre of Excellence in Technical Education and Research in producing Competent and Ethical professionals to the society.

Mission

To impart Value and Need based curriculum to the students with enriched skill development in the field of Engineering, Technology, Management and Entrepreneurship and to nurture their character with social concern and to pursue their career in the areas of Research and Industry.

OUR DEPARTMENT:

Vision

To emerge as a center of excellence through innovative technical education and research in Information Technology.

Mission

To produce competent Information Technology professionals to face the industrial and societal challenges by imparting quality education with ethical values.

Program Outcome

1. **Engineering knowledge:** *Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*
2. **Problem analysis**: *Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*
3. **Design/development of solutions:** *Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*
4. ***Conduct investigations of complex problems:*** *Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*
5. ***Modern tool usage:*** *Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.*
6. ***The engineer and society:*** *Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*
7. ***Environment and sustainability:*** *Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*
8. ***Ethics:*** *Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*
9. ***Individual and team work:*** *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*
10. ***Communication:*** *Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*
11. ***Project management and finance:*** *Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*
12. ***Life-long learning:*** *Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.*

Program Educational Objectives

1. To excel in industrial or graduate work in Information Technology and multi-disciplinary Environments.

2. To adapt to ever changing technologies by applying Engineering Principles.

3. To practice professionalism conforming to ethical values, team work and Leadership.

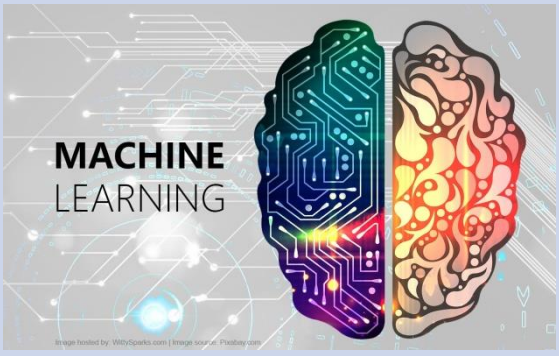
Program Specific Outcomes

1. To create better learning environment in line with technological updation and research progress.

2. To give industry exposure through research and consultancy in Information and Communication Technologies.

MACHINE LEARNING

The relevance of any field depends on the ongoing research and studies around it. This especially holds for advancing fields like machine learning.



To bring you up to speed on the critical ideas driving machine learning in 2022, we handpicked the top 10 research papers for all AI/ML enthusiasts out there!

Artificial Replay: A Meta-Algorithm for Harnessing Historical Data in BanditsAuthor(s) – Sean R. Sinclair et al.

Ways to incorporate historical data are still unclear: initialising reward estimates with historical samples can suffer from bogus and imbalanced data coverage, leading to computational and storage issues—particularly in continuous action spaces. The paper addresses the obstacles by proposing 'Artificial Replay', an algorithm to incorporate historical data into any arbitrary base bandit algorithm.

It is a subfield of artificial intelligence (AI) that focuses on developing algorithms and models that enable computers to learn and make predictions or decisions without being explicitly programmed. It involves the creation of mathematical models and algorithms that allow computers to learn from and analyze data, recognize patterns, and make data-driven predictions or decisions.

In the field of machine learning, there are many experts who have made significant contributions and have extensive knowledge. Some well-known researchers and experts in machine learning include:

1) ***Geoffrey Hinton**: Known as the "Godfather of Deep Learning," Hinton is a pioneer in the field. His work on neural networks and deep learning has revolutionized the field of machine learning.*

2) ***Yoshua Bengio**: Bengio is another influential figure in deep learning and neural networks. He has made significant contributions to the theory and applications of machine learning, particularly in the area of deep learning.*

3) ***Andrew Ng**: Ng is a prominent figure in the field of machine learning and co-founder of Coursera. He has contributed to various*

areas of machine learning, including deep learning, and has played a key role in popularizing the field through his online courses.

4) ***Yann LeCun***: *He is known for his work on convolutional neural networks (CNNs) and their applications in computer vision. He has made substantial contributions to the development of deep learning algorithms.*

5) ***Fei-Fei Li***: *Li is a leading researcher in computer vision and machine learning. She has worked on large-scale visual recognition tasks and has been influential in advancing the field of computer vision.*

- *These are just a few notable experts in machine learning, and there are many other researchers and practitioners who have made significant contributions to the field. Machine learning is a rapidly evolving field, and new experts continue to emerge as research progresses.*

-B. Hanish Ram (First year)

Certainly! Here are a few more experts in machine learning:

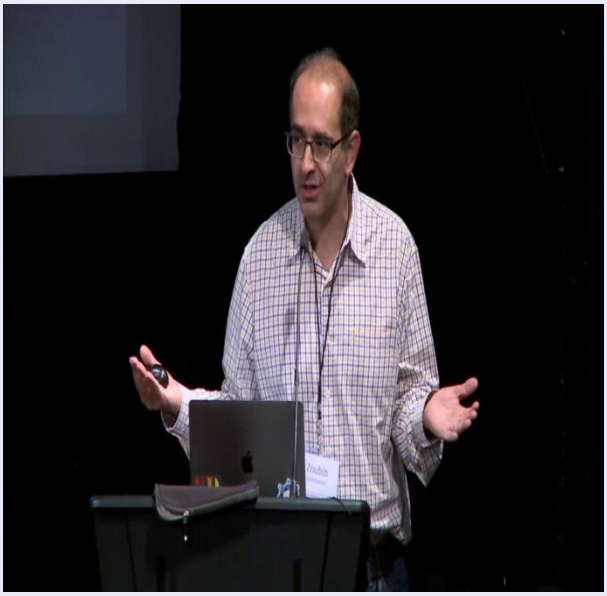
1. ***Sebastian Thrun:*** *Thrun is a renowned computer scientist and educator who has made significant contributions to the field of machine learning. He played a key role in developing Google's self-driving car and has made contributions to robotics and artificial intelligence.*

2. ***Ian Goodfellow:*** *Goodfellow is a prominent researcher in the field of deep learning and generative models. He is the creator of generative adversarial networks (GANs), a powerful framework for generating synthetic data.*

3. ***Cynthia Dwork:*** *Dwork is a leading expert in the field of privacy-preserving machine learning. She has worked on developing algorithms and techniques*

that enable machine learning while maintaining privacy and data security.

4. ***Zoubin Ghahramani**: Ghahramani is a prominent figure in the field of probabilistic machine learning. He has worked on developing algorithms and models that integrate probabilistic reasoning into machine learning tasks, enabling better uncertainty estimation and decision-making.*



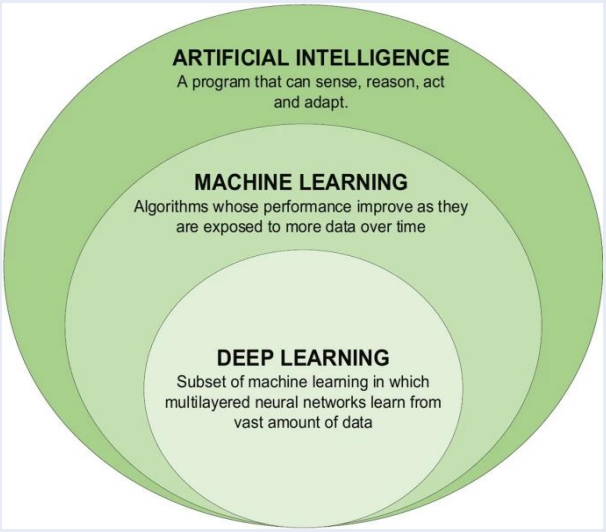
5. ***Ruslan Salakhutdinov:** Salakhutdinov is known for his work on deep learning, probabilistic models, and applications in computer vision and natural language processing. He has contributed to both theoretical advancements and practical applications of machine learning.*

-S. Sivaranjani (First year)

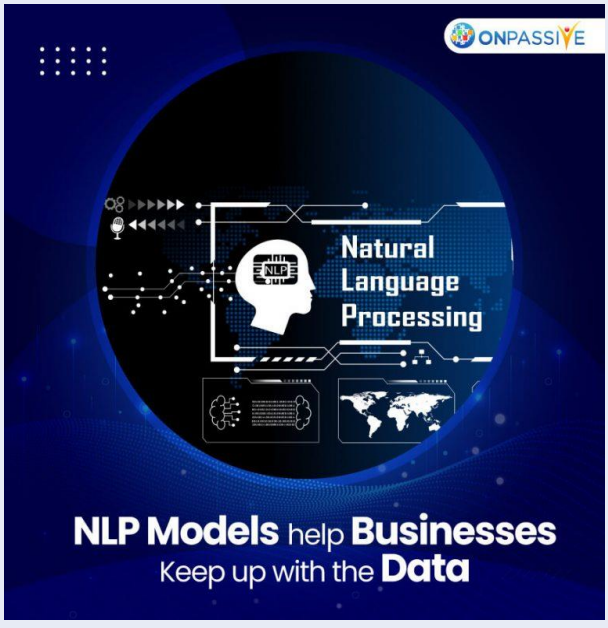
These experts have made substantial contributions to the field of machine learning and have helped shape its development. It's worth noting that the field of machine learning is vast, and there are numerous other experts and researchers who have made valuable contributions.

Contributionof machine learning in 2022:

1. **Advancements in Deep Learning:**
   Deep learning techniques, particularly deep neural networks, have continued to advance in terms of both architecture and performance. Researchers have been exploring novel architectures, optimization methods, and training techniques to improve the efficiency and accuracy of deep learning models.



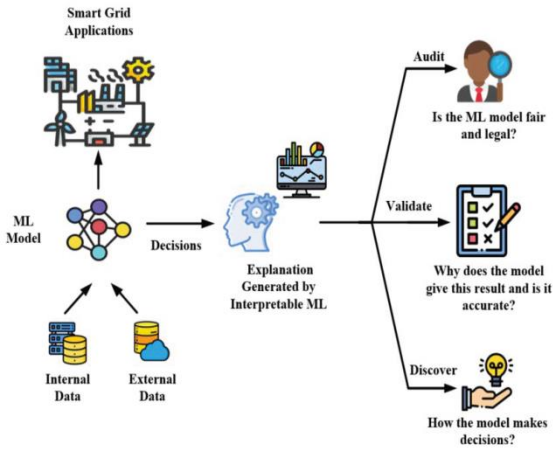
2. ***Natural Language Processing (NLP) and Language Models:*** *Language models, such as OpenAI's GPT-3, have demonstrated impressive capabilities in natural language understanding*



and generation. In 2022, NLP research was focused on developing more advanced models, improving contextual understanding, and addressing ethical concerns regarding bias and fairness in language models.

3. ***Reinforcement Learning*** *Reinforcement learning, which involves training models to make sequential decisions based on rewards and punishments, has seen significant progress. Researchers have been working on developing more efficient algorithms, exploring new application areas, and achieving breakthroughs in complex games and robotics.*

4. ***Explainable and Interpretable AI:*** *As machine learning models become increasingly complex, the need for interpretability and explainability has gained attention. Researchers have been focusing on developing techniques to make AI models more transparent, enabling better understanding of their decision-making processes and building trust with users.*



5. ***Machine Learning in Healthcare:*** *Machine learning has been applied to various healthcare tasks, including medical imaging analysis, disease diagnosis, personalized treatment recommendation,*

and drug discovery. In 2022, efforts were made to leverage machine learning for early disease detection, improving patient outcomes, and optimizing healthcare operations.

6. ***AutoML and Model Optimization:*** *Automated Machine Learning techniques have gained popularity, aiming to simplify the process of building and deploying machine learning models. Researchers have been developing methods to automate various stages of the machine learning pipeline, including data preprocessing, feature engineering, model selection, and hyperparameter optimization.*

- *The field of machine learning is rapidly evolving, For the latest updates and specific contributions in 2022, I recommend referring to research publications, conferences, and industry news sources.*

-C.A. Sastha (First year)

TIMELINE
NPTEL ONLINE CERTIFICATION COURSES (STAFF)

Name of the Staff & incharge	Course Title	Course duration	Course conducted by	Award
Mr.A.Selvaraj, AP(Sr.Gr)	Advanced Computer Architecture	Jan-Apr 2022	IIT Roorkee	Elite & Silver

SHORT TERM COURSES /SEMINARS/ CONFERENCES / WORKSHOPS ATTENDED

S.No.	Name of the faculty	Title of the event, FDP/Workshop/ Seminar	Date	Sponsored by (AICTE/ AU/ IEEE/ IEI/ ISTE etc.)/Self Support
1	Mr. A Selvaraj, AP(Sr.Gr)	Recent trends and Challenges in AI, IoT and Blockchain	09-02-22 To 18-02-22	Easwari Engineering College
2	Mrs.S.Vijaya sharmila, AP/IT	IoT Technologies and Analytics	18-01-2022 To 24-01-2022	AICTE Anna University, Chennai.
3	Ms.N.Muthamil Selvi, AP/IT	Short term training Program on " Information Security"	06-01-2022 to 12.01.2022	AICTE Anna University, Chennai.
4	Ms. RM. Suganya, AP/IT	Short term training Program on " Recent trends on Data Science	03-01-2022 to 08.01.2022	AICTE Anna University, Chennai.
5	Ms. RM. Suganya, AP/IT	IoT Technologies and Analytics	18-01-2022 To 24-01-2022	AICTE Anna University, Chennai.
6	Mrs. N. Logamithra, AP/IT	IoT Technologies and Analytics	18-01-2022 To 24-01-2022	AICTE Anna University, Chennai.
7	Mrs.N.Logamithra,AP/IT	Short term training Program on " Information Security"	06-01-2022 to 12.01.2022	AICTE Anna University, Chennai.

SHORT TERM COURSES /SEMINARS/ CONFERENCES / WORKSHOPS/ SYMPOSIUM ORGANIZED

Date	Topic / Title	Details of Resource persons	Number of partici-pants	Co-ordinator
04-04-22 To 08-04-22	Five Days Career Development program on "C Programming"	Mr.M.Sulthan Alavudeen – Free Lancer Mr.A.Sathish – Free Lancer, Livewire, Madurai.	80	Dr. S. Ramesh, ASP/IT Mr. V.AravindaRajan, AP/IT
26-04-22	IIPC Sponsored Personality Development Programme on " Build Your Empire"	Mr. P. Thanika Vel Pandian, Founder & Director, Vision 20 Plus, Sivakasi.	80	Mr. V.AravindaRajan, AP/IT Ms. S. Vijayasharmila, AP/IT

FUNDS OBTAINED FROM NATIONAL BODIES / AU / INDUSTRY

Mr. M. Satheesh Kumar, AP2 as Project Guide were granted a fund of Rs1,00,000 by TAMIL NADU STUDENT INNOVATORS PROGRAMME 2021 by EDII-TN for a project entitled " Hello Friend" on 12-04-2022.

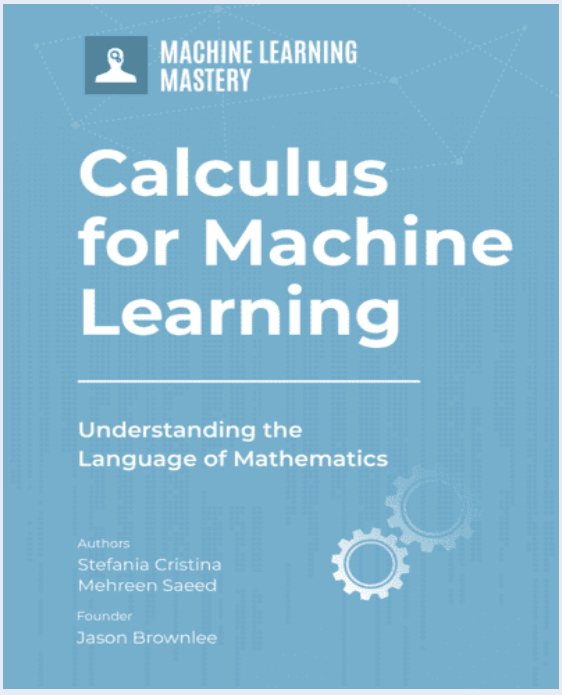
NPTEL ONLINE CERTIFICATION COURSES (STUDENT)

Name of the Student	Year	Course Title	Course duration	Course Conducted By	Award
AAFRIN SULAIHA A	II	Advanced Computer Architecture	Jan-Apr 2022	IIT Roorkee	Elite
DEVADHARSHINI M	II	Advanced Computer Architecture	Jan-Apr 2022	IIT Roorkee	Completed
DEVADHARSHINI V	II	Advanced Computer Architecture	Jan-Apr 2022	IIT Roorkee	Completed

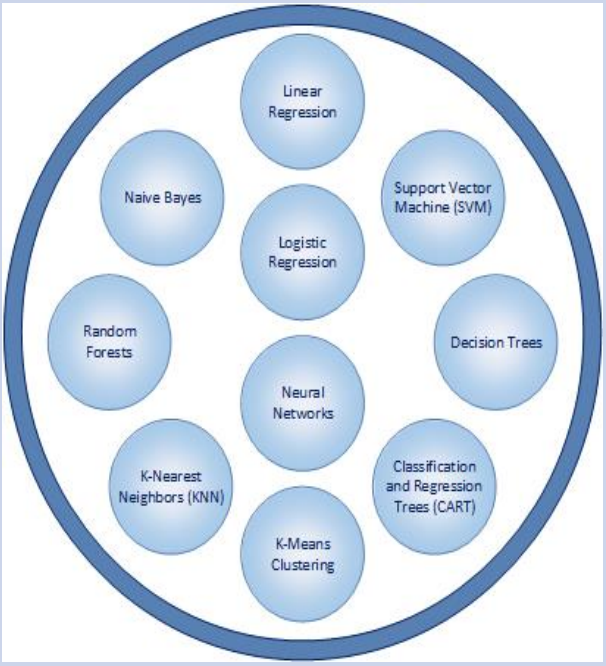
OUT OF THE BOX

Certainly! Here are 10 tips to help you improve in machine learning:

1. ***Understand the Fundamentals:*** *Start by building a strong foundation in the fundamental concepts of machine learning, including supervised and unsupervised learning, model evaluation, feature selection, and over fitting. This understanding will help you make informed decisions throughout the machine learning process.*
2. ***Master Programming and Data Manipulation:*** *Proficiency in programming languages such as Python and R is essential for implementing machine learning algorithms and manipulating data effectively. Practice your programming skills and become comfortable with data manipulation libraries such as NumPy and Pandas.*
3. ***Dive into Mathematics and Statistics:*** *Develop a solid understanding of linear algebra, calculus, and statistics. Concepts like matrix operations, derivatives, and probability distributions are fundamental to many machine learning algorithms.*



4. ***Explore Diverse Algorithms:*** *Familiarize yourself with a wide range of machine learning algorithms, including linear regression, logistic regression, decision trees, support vector machines, and neural networks. Understand their strengths, weaknesses, and appropriate use cases.*



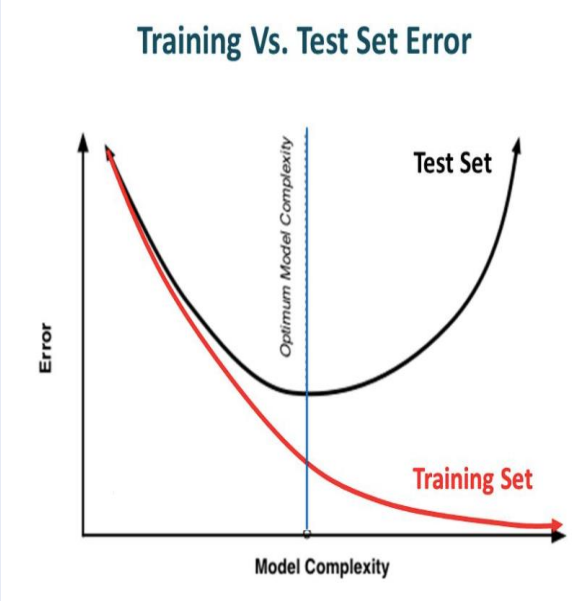
5. ***Learn from Practical Projects:*** *Apply your knowledge to practical projects and datasets. Implement machine learning algorithms from*

scratch and work on real-world problems. This hands-on experience will deepen your understanding and sharpen your skills.

6. ***Feature Engineering***: *Feature engineering involves transforming raw data into meaningful features that can enhance model performance. Learn various techniques such as feature scaling, dimensionality reduction, handling missing data, and creating new features to improve model accuracy.*

7. ***Feature Engineering***: *Feature engineering involves transforming raw data into meaningful features that can enhance model performance. Learn various techniques such as feature scaling, dimensionality reduction, handling missing data, and creating new features to improve model accuracy.*

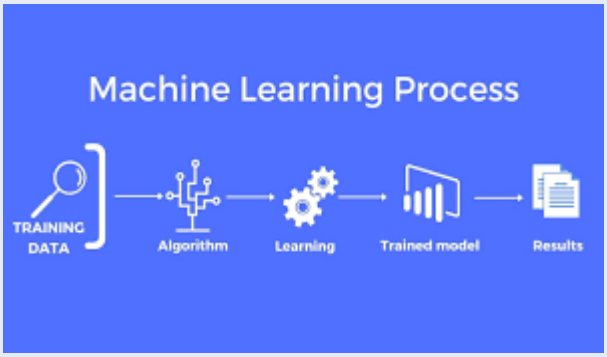
8. **Regularization and Hyperparameter Tuning:** Regularization techniques like L1 and L2 regularization can help prevent overfitting in complex models. Additionally, perform hyperparameter tuning to optimize model performance by using techniques like grid search, random search, or more advanced optimization algorithms.



9. ***Stay Up-to-Date***:

Keep abreast of the latest research papers, publications, and industry trends in machine learning. Follow reputable sources, attend conferences, and join online communities to stay informed about new algorithms, techniques, and best practices.

10. **Collaborate and Share:** *Engage with the machine learning community by participating in discussions, sharing your projects, and collaborating with others. This will expose you to different perspectives, foster learning, and help you grow as a machine learning practitioner.*



➢ *Remember, machine learning is a continuous learning process, so practice regularly, be patient, and persevere through challenges. Each project and problem you tackle will contribute to your growth and mastery in the field.*

-K.R. Venkataramana (First year)