INTRODUCTION.

A strong Mathematical foundation is essential for Machine Learning (ML). An expert in ML with a strong base in Mathematics is an ideal resource person to teach the necessary math for ML.

Thus, in this workshop, experts in Mathematics with a sound knowledge of ML will give insights of math in ML. In one-week a participant will have the opportunity to learn the following:

➤ The math concepts such as Linear Algebra, Probability,Distributions, Higher dimensional Calculus and Optimization;
➤ The methodology for ML;
➤ The algorithms;
➤ The computational aspect of the algorithms;

Finally, the realization of a problem will be established.

Course topics

➤ Mathematical Foundation
  Linear Algebra
  Dr. Sivaram Ambikasaran, IITM
➤ Probability and Distributions
  Dr. Neelesh Upadhye, IITM
➤ Higher Dimensional Calculus (Vector Calculus)
  Prof. Manam Srinivasa Rao, IITM
➤ Optimization
  Prof. V. Vetrivel, IITM
➤ Machine Learning Technique / Problems
  Prof. S. Sundar, IITM, NIT, Mizoram

Who Can Attend The Workshop?

Students and Faculty of Mathematics and CSE with considerable knowledge of coding in C or C++ , Mat lab.

Registration Fees.

All participants must pay an Amount of Rs **1500/-**

Resource Persons.

Dr. Sivaram Ambikasaran is an Assistant Professor in Department of Mathematics and Robert Bosch Centre for Data Science & Artificial Intelligence (RBCDSAI), IIT Madras. He obtained his PhD from Stanford University. His research areas are Fast Algorithms, Numerical Linear Algebra, Approximation Theory, Data Estimation, Computational Statistics

Dr. Neelesh Upadhye is an Associate Professor in the Department of Mathematics, IIT Madras. His PhD is from IIT Bombay. He has a demonstrated history of coding in the higher education industry. He is skilled in mathematical modelling, R Stochastic Modeling and statistical Modeling.

Dr. Manam S.R is a Professor in Department of Mathematics at IIT Madras. He obtained his PhD from IISC Bengaluru and his research interests are Differential and Integral Equation and hydrodynamics.

Dr. Vetrivel is Professor and Head of Department of Mathematics, IIT Madras. His research areas are Non-Linear analysis, Variational in qualities, Optimization and fixed-point theory.

Dr. S. Sundar is at present Director, NIT Mizoram, Professor, IIT Madras. He is a DAAD Ambassador (German Academic Exclusive Service) His Research areas are Numeri's for PDES Mathematical Modeling and Numerical Simulation.

Contact for more Information.

• Dr. Ch. V. Sreedhar (Dept of Math)
  Contact: +91 9490131784

• Dr. Y. Anuradha (Dept of CSE)
  Contact: +91 88864 77792

Organizing Committee.

Chief Patron
Prof. Dr. Ing. P. S. Rao, President, GVP

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Sri D. Dakshina Murthy, Vice-President, GVP
Prof. K. P. R. Sastry, Vice-President, GVP
Prof. P. Somaraju, Secretary, GVP
Prof. P. V. Sarma, Member, Secretary, GVPCDPGC(A)

Chairman:
Prof. A. B. Koteswara Rao, Principal

Conveners:
Dr. J. Vasundhara Devi

Co-Conveners:
Dr. Ch. V. Sreedhar
Dr. Y. Anuradha

Coordinating Committee:
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➤ Dr. DND Harini, HoD, Dept. CSE
➤ Dr. R. V. V. Murali Krishna, HoD, Dept. IT
➤ Dr. Y. Anuradha, HOD, Dept. MCA
➤ Dr. D Uma Devi, Associate HOD, Dept. AI-ML

Venue.

Departments of Mathematics & Computer Science and Engineering
Gayatri Vidya Parishad College of Engineering
3.47/4.00 Madhurawada, Visakhapatnam.

About the Institution.

The Gayatri Vidya Parishad College of Engineering has a 5000 strong contingent of students pursuing quality and skill oriented education. The college is established by 'Gayatri Vidya Parishad'(GVP), a non-profitable organization comprising of noted educationists and eminent philanthropists who have a missionary zeal to provide quality technical education. The college is one of the most- preferred self-financing engineering colleges in Andhra Pradesh and at present offers 10 B.Tech. Programs, 9 M.Tech. and one MCA Program approved by AICTE. The college has brought in many initiatives for the benefit of students with autonomous status granted by UGC in 2009 and extended up to 2025. The institute has been reaccredited second time by NAAC with 'A' grade with CGPA of 3.47/4.0. All the eligible seven B.Tech. programs are accredited by NBA at least twice. The institute received funds to the tune of Rs. 5 Crores under Technical Education Quality Improvement Program (TEQIP), S.C-1.2. The college received Rs. 12 Crores from funding organizations AICTE / DST / NBHM / ARB etc. towards 45 R&D projects.

Dept of Mathematics.

The faculty of the Department of Mathematics is very active and strong in both teaching and research. It caters to the needs of the engineering students by offering all the necessary prerequisite mathematics courses required in the curriculum. It takes special efforts and caters to the needs of slow learner. A couple of faculty co-authored research monograph and text books for undergraduate and graduate students. The department conducts GVP Math Olympiad every year for students of engineering in and around Visakhapatnam.

Dept of Computer Science and Engg.

The Department of Computer Science and engineering was established in the year 1996 is one of the most sought-after departments in the region. It has about 1550 students studying for their B.Tech (CSE). The department is recognized as research center by Andhra University. The department has a strong relationship with industry and comprises of faculty qualified by industry.
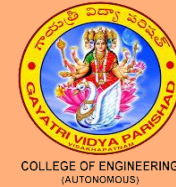
Dept of Computer Applications.

The Department of Computer Applications was established in the year 2004 is well sought-after department in the regions. It has 120 students pursuing post graduate degree in computer applications. The faculty posses in patient and industry certification.

Dept of Information Technology.

The Department of Information Technology established in 1999 and has about 350 students at undergraduate level. The department was accredited by NBA since 2006. The department has a strong relationship with industry and comprises of faculty qualified by industry.

GVP-LIAS.

Gayatri Vidya Parishad Professor V. Lakshmikantam institute for advanced studies (GVP-LIAS) organize seminars/ workshop / conference every year. GVP-LIAS in association with the departments of GVP-College of Engineering organized four international conferences titled, "Recent Advances in Mathematical Sciences and Applications (RAMSA)" in 2009, 2013 2017 and 2021. GVP-LIAS boasts of hosting a good number of distinguished Mathematicians, Scientists and Researchers from various parts of the country and from abroad.

Centenary Year of
Prof. V. Lakshmikantham
(16-03-2023 to 16-03-2024)

ONE WEEK NATIONAL WORKSHOP

on

Mathematics for Machine Learning (MAML)

13th Mar – 17th Mar 2023

Organized by
Departments of Mathematics, Computer Science and Engineering, Information Technology Computer Applications & Gayatri Vidya Parishad - Prof. V. Lakshmikantham Institute for Advanced Studies (GVPLIAS)

In Association with

International Federation of Nonlinear Analysts (IFNA)