



DAAD Deutscher Akademischer Austauschdienst
German Academic Exchange Service



Leibniz
Universität
Hannover

Indo-German Winter School on

Mathematics of Data Science

Supported by

DAAD

IIT Indore

LU Hannover

Dates

12th December – 14th December, 2022

Venue

Welfengarten 1, Room A320, LU Hannover

To register email to kahuja@iiti.ac.in

Organizers

Prof. Dr. Kapil Ahuja, IIT Indore, India

Dr. Ahuja is working as a Professor in Computer Science and Engineering at IIT Indore (India). Earlier, he completed a postdoc from the Max Planck Institute in Magdeburg (Germany) and double Master's plus Ph.D. from Virginia Tech (USA). Recently, he has been a visiting professor at TU Braunschweig (Germany), TU Dresden (Germany), and Sandia National Labs (USA). His research interests are in Machine Learning, Algorithms, Numerical Linear Algebra, and Mathematical Optimization. His current emphasis has been on efficient machine learning algorithms for plant and cancer studies; stability analysis of model reduction algorithms for exascale machines; and game theoretic approaches to social cloud and poverty reduction.



Prof. Dr. Thomas Wick, LU Hannover, Germany

Dr. Wick is a Professor for Scientific Computing at the Institute of Applied Mathematics of the Leibniz Universität Hannover (Germany). Earlier, he completed a postdoc from The University of Texas at Austin (USA) and Ph.D. from Heidelberg University (Germany). His research interests are in Design, Implementation and Analysis of Numerical Methods and Algorithms for Computational Fluid Dynamics, Solids, Multi-physics and Crack Propagation problems in Elasticity and Poro-elasticity. He is also interested in Error Estimation and Adaptive Methods such as local mesh adaptivity with a particular emphasis on goal-oriented techniques.



Prof. Dr. Marc C. Steinbach, LU Hannover, Germany

Dr. Steinbach is a Professor for Algorithmic Optimization at the Institute of Applied Mathematics of the Leibniz Universität Hannover (Germany). Earlier, he completed a postdoc from the Zuse Institute Berlin (Germany) and Ph.D. from Heidelberg University (Germany). His research interests are in Applied Mathematical Optimization, specifically in developing robust and efficient algorithms and software for important classes of large-scale problems from business and industry. His current emphasis is on optimization of nonlinear network flows and on multistage stochastic programming.



Training Program Schedule

Lectures	Date & Time	Topic
Lecture-1	12 December 2022 (10 am to 10:50 am)	<i>Introduction (Tasks, Models, Features).</i>
Lecture-2	12 December 2022 (11.00 am to 11:50 pm)	<i>Geometric Models (SVM with its Dual Problem).</i>
Lecture-3	13 December 2022 (10:00 am to 10:50 am)	<i>Geometric Models (SVM with Soft-Margin and Kernel Trick).</i>
Tutorial-1	13 December 2022 (11:00 am to 11:50 am)	<i>SVM Tutorial-Lab.</i>
Lecture-4	13 December 2022 (12:00 Noon to 12:50 pm)	<i>Distance Based Models (Nearest Neighbor Classifier).</i>
Lecture-5	14 December 2022 (10:00 am to 10:50 am)	<i>Distance Based Models (K-Means Clustering).</i>
Tutorial-2	14 December 2022 (11:00 am to 11:50 am)	<i>Distance Base Tutorial-Lab.</i>
Lecture-6	14 December 2022 (12:00 noon to 12:50 pm)	<i>Probabilistic Models (Naive Bayes Classifier).</i>