

GPUS FOR OPTIMISATION

SOLVING LARGE SCALE INTEGER PROGRAMS USING GPU-ACCELERATED ALGORITHMS



Alumni speaker:

Vadrevu Samhita

Sr Data Scientist
United Airlines

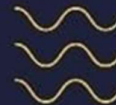
📅 11th April 2023

🕒 7:00PM ONWARDS

📍 meet.google.com/rjs-jvin-nvx

ABSTRACT:

Recent advancements in Natural Language Processing and Computer Vision have seen an increasing trend towards modeling these applications as large graphs and optimization problems. However, as the size of these graphs grows, so does the difficulty of solving these problems. In this talk, we will explore the challenges of solving large scale optimization problems and how GPUs can be utilized to overcome them. Our focus will be on developing scalable algorithms that are not only efficient, but also provide explainable solutions to these highly consequential problems. Specifically, we will discuss formulating certain problems as integer programs and utilizing GPU-based algorithms to solve them



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The AIT Journal



A Talk on

**MAXIMAL
OPERATOR ON
NONSTANDARD
FUNCTION
SPACES**

**BY PRZEMYSŁAW GÓRKA,
WARSAW UNIVERSITY OF
TECHNOLOGY**

We will discuss the Hardy-Littlewood maximal operator on the variable exponent H^p -older spaces in the setting of metric measure spaces and on the Musielak–Orlicz–Sobolev spaces in the Euclidean setting. We focus on boundedness and on the continuity of the maximal operator on mentioned spaces. The talk is based on joint works with Piotr Bies and Michał Gaczkowski.



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GUEST TALK

Dr. Shanta Laishram

Professor of Mathematics &
Head, Theoretical Statistical &
Mathematics Unit (SMU), Indian
Statistical Institute, New Delhi



ON A CONJECTURE OF ERDOS ON SQUARES IN ARITHMETIC PROGRESSION

A remarkable result of Erdos and Selfridge states that a product of two or more consecutive integers is never a perfect power. Erdos conjectured that if a product of k consecutive terms of an arithmetic progression is a perfect power, then k is bounded explicitly. In this talk, I will give an overview of the problem with emphasis on the squares case and present some new results and related problems



Feb 07, 2023 (Tuesday)
11:00AM-12:00 PM



G108

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Sumit Kumar -7989922753

CLASSICAL PROBLEMS: CALCULUS OF VARIATIONS TO OPTIMAL CONTROL



Prof. A. K. Nandakumaran

Department of Mathematics,
IISc, Bangalore

The classical extremal problems (minimization and maximization) is probably as old as human settlement whereas a systematic study of Calculus Variations (CV) was initiated by Euler

We begin by introducing the iso-perimetric inequalities and Heron's problem. Other

problems, we touch upon, are Brachistochrone problem due to Johann Bernoulli, Fermat's Principle in optics which predicts Snell's Law and Catenary problem

Thus, the idea is to see how mathematics helps us to unify a variety of problems. The idea of the lecture is to see the importance of mathematics in dealing with non-trivial problems which may motivate the young minds to take mathematics as a career. Essentially, we present a quick overview of CV through some of the classical problems leading to the optimality conditions. This talk has a second part, where a minimization problem with ODE constraints which opens up an entire area of optimal control problems. The modern study of Optimal Control problems came up much later. It became one of the most independent areas of research with a wide variety of applications with powerful use of modern analysis.



Feb 06, 2023 (Monday)

11:00 AM- 12:00 PM.

G208